THE IRON AGE

THURSDAY, JANUARY 29, 1891.

The Illinois Steel Company's New Bar Mill.

Under the management of Francis Hinton the Milwaukee works of the Illinois Steel Company continue to advance in every respect. The results of the past year have been exceedingly satisfactory. The output surpassed that of any previous year, not excepting the time when the mill was producing rails. The plant has been greatly improved and modernized within the past two years, the furnaces having been remodeled and the mill thoroughly overhauled. The latest addition to the plant is a 9-inch mill, housed in a new building specially erected for it. This mill was started in the latter part of November, and almost immediately worked up to its capacity. The mill and train equipment are described as follows:

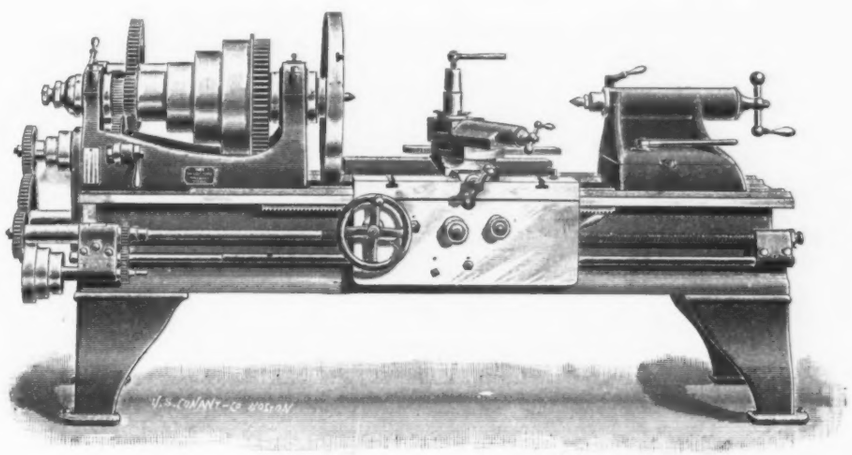
The train (9 inches in diameter) was built by the Lewis Foundry and Machine Company of Pittsburgh, and consists of five stands of housings; three sets of rolls being three high, one set of oval rolls, and one set of finishing rolls, the latter being, of course, two high. The three-high sets are made with closed tops, having brass center-screw box, steel screws and bronze journal bearings. The oval and finishing sets have open tops, with spring carriers for top roll, doing away with liners when rolling different thicknesses of flats, the spring bringing the top roll into proper position when the bolts are slackened. The pinions of the train are also open top, filled with Hunter's patent self-oiling bearing. The furnace used in connection with this train is a Smythe-Laughlin regenerative gas furnace, 14 feet in length from bridge to bridge and 7 feet from front to back wall, having four doors. The mill is also equipped with a Baldwin stretcher for straightening the bars hot as they leave the rolls, capable of straightening bars 72 feet long. The shears and bundling bench are about 85 feet from the finishing rolls and at the end of the hot bed, thus allowing ample room for the rolling of long bars. Steam for the mill is supplied from three tubular boilers, built by John Mohr & Son of Chicago. These boilers also furnish steam for the 8-inch train engine, which is adjacent to the 9-inch mill. The feed water is heated by a steam heater manufactured by Hoffmann & Billings Mfg. Company of Milwaukee. This is supplied by the exhaust steam from the 8-inch and 9-inch train engines. The engine is known as a Nordberg Corliss engine, and was made by the Wilkin Mfg. Company of Milwaukee. A narrow-gauge track runs along the entire western end of the mill past the shears, and tram cars run upon it to the warehouse or railroad loading yard. The building covering the train is large, roomy and exceptionally well lighted. The ventilation is very good. The building is made entirely of steel and iron, manufactured and erected by the Milwaukee works of the Illinois Steel Company.

The distribution of mail matter in large cities by pneumatic tubes has been made the subject of a special report to the authorities at Washington. In London, the report states, the system of transmitting small rolls of paper through tubes a few inches diameter by pneumatic pressure is used in connection with the Telegraphic Department of the British Post Office. The system extensively used in Paris and other Continental cities is the circuit system, in which stations are grouped on circular or looped lines, around which carriers travel in one direction only. In Paris large areas of the city have been covered by pneumatic circuits made by the iron pipes, around which omnibus trains of carriers are sent at intervals of 15 minutes. The trains consist of several carriers linked to one another and to a leading piston. The trains are stopped at the successive stations to take up and deposit dispatches. In Paris and Vienna the trains collect and distribute the messages as they go their round, while in London the messages are collected at one point and afterward sent to their various destinations.

There was paid by the railroads of the country in 1890, $363,000,000 in the shape of interest and dividends. This sum, of course, is greater than the disbursements of this sort ever made before in any year. It is 7 per cent. larger than those of 1889, 16 per cent. in excess of those of 1888, and 22 per cent. ahead of those of 1887, and represents an amount considerably more than half as great as the bonded debt of the Government, exclusive of that guaranteed for the Pacific railroads.

A New Lathe.

To all the lathes now built by the Bradford Mill Company of Cincinnati, Ohio, are applied the improvements invented by Edward A. Muller, the vice-president of the company. The detail drawings show the construction now followed in the headstock, apron and countershaft, while the perspective gives a good idea of the feed mechanism. The 24-inch lathe is designed with special reference to handling either light or heavy work in the most convenient manner, and as economically as possible. The feeding device enables the operator to feed with either belt or gearing, without the necessity of using the thread and lead screw for cross feeds. It is claimed that this device has every advantage of the splined lead screw and also the independent feed rod and feed screw, besides having some desirable features possessed by neither of those mentioned. To the bed plate is secured a casting which furnishes bearings for the lead screw and feed rod, both of which are shown extending across the front of the lathe in the perspective view, and also the bearing for a third shaft placed under the others, and upon the outer end of which is secured a cone pulley.



TWENTY-FOUR INCH LATHE, BUILT BY THE BRADFORD MILL COMPANY.

Upon the end of the lead screw is secured a gear wheel, which is driven from a cone pulley through an intermediate gear. The speed of the lead screw is regulated according to the requirements of the work under treatment by change gear in the usual way. The casting forming the bearings is extended so as to form long bearings for the lead screw and cone shaft, which insures steady, even movement and prevents jar or rattling, and hence wear upon the journal and other bearings. Upon the feed rod is rigidly secured a pinion, and upon the lead screw and the cone shaft are splined pinions, either of which may be thrown into gear with the fixed pinion or disengaged from it, so that the feed rod may be disengaging one of the splined pinions and engaging the other for driving, as desired, either by the cone pulley or by cogged gearing. When the lathe is used for chasing screws both pinions are thrown out and the pinion on the lead screw is brought into engagement with that on the feed rod. When arranged in that way the cone pulley and its shaft

run idly. When it is desired to run the feed rod by the belt on the cone pulley the position of the movable pinions is reversed, and then the lead screw will run idly, being, of course, disconnected from the carriage by separating its half nuts. In either case it is not necessary to disturb or remove the belt or cogged gearing, and as the changes are rapidly made much time is saved.

The main object attempted in designing the friction clutch for the countershaft was to obtain one that would be both reliable and inexpensive. The countershaft and cone pulley are of the ordinary construction, as shown in Fig. 4. The loose pulleys are formed with flanges, which project from one side of their arms. Mounted on the shaft is a hub formed with a crosshead and a clutch ring cast in one piece, and the lugs on the latter projecting outwardly. The inside of the ring is turned to fit freely over the flange of the loose pulley, after which the lugs are severed, so that when they are forced toward each other the rings will clamp tightly upon the flange of the loose pulley and thus effect the coupling. The ring is tightened by two levers which are pivoted, as shown in the drawing, and are operated by the movable collar sliding upon the shaft, and which is formed with the usual annular ring in order to receive the end of the shifting lever. The arrangement is such that when the levers are forced apart the ring is tightened upon the flange, and when the collar is withdrawn from about the ends of the levers, the rings spring open and release the pulley. In Fig. 2 is clearly shown the construction of the headstock, while Fig. 3 shows plainly the form of the apron.

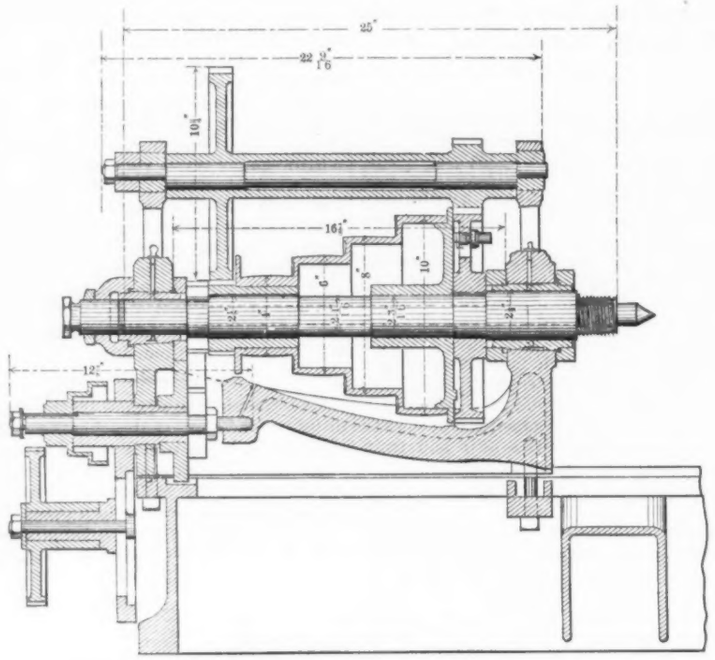


Fig. 2.—Head-Stock.

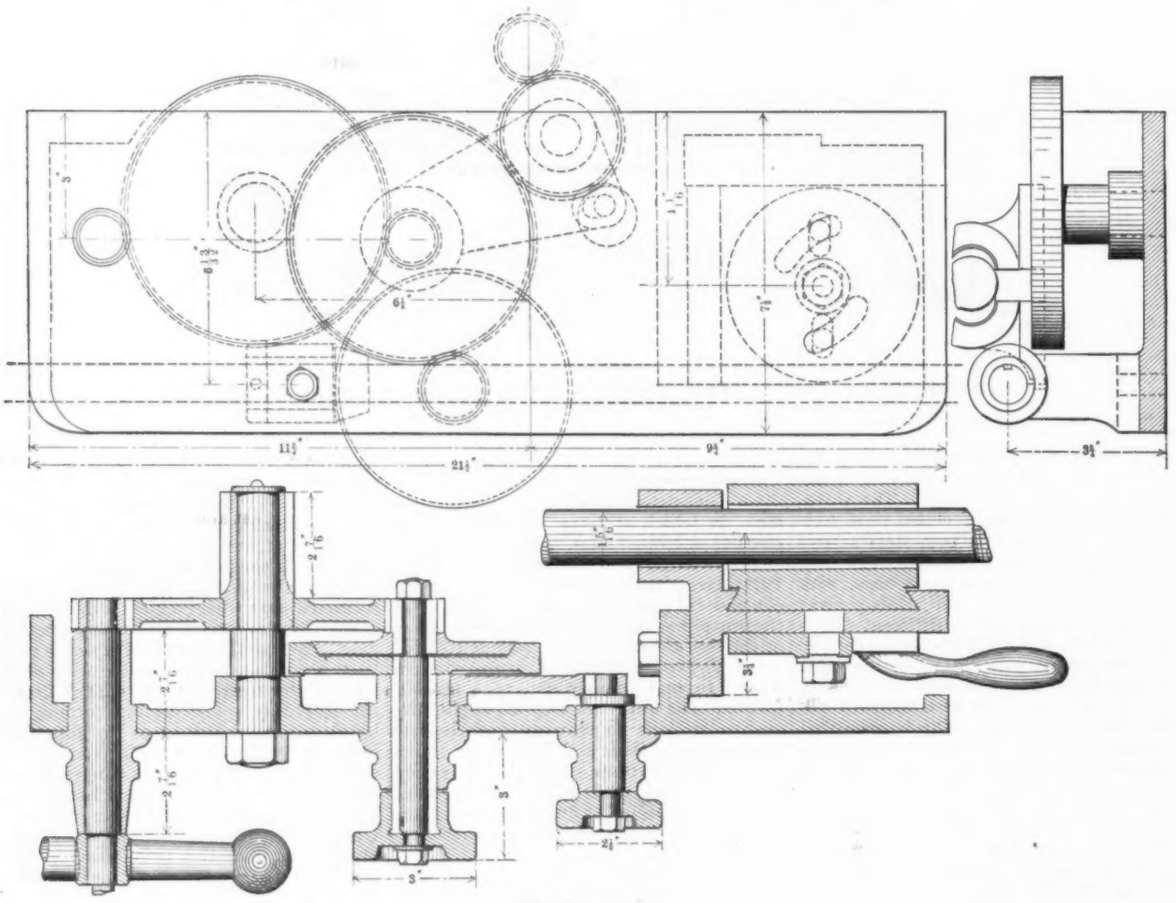


Fig. 3.—Apron.

TWENTY-FOUR INCH LATHE.

The New York State canals are a potent factor in regulating freight charges between the East and the West, whether by boat or rail. The report of the Superintendent of Public Works shows that during the period of navigation the total amount of grain received in New York City was 77,702,156 bushels, 30,082,900 of which was transported by canal. The total tonnage of the canals for the season was 5,246,102, which is 124,267 tons less than that of 1889 and 303,154tons greater than that of 1888. As the improvements on the Erie progress the cost of moving grain decreases more or less proportionately. In 1887 the price paid for carrying wheat from Buffalo to New York by canal was 4.6 cents per bushel. In 1889 the price was two tenths of a cent higher. Last year the price was 3.87 cents.

The Brass Manufacture at Kenosha.

Kenosha, Wis., has the only copper and brass rolling mill for the purpose of supplying manufacturers with rolled sheet brass and copper west of Detroit. This belongs to the Chicago Brass Company. The company were incorporated in 1886, and began operations January 20, 1887. When they began the product had to be shipped to Eastern markets. During the past few years several manufacturing establishments have been located at Kenosha, and further manufacturing enterprises assured. The facilities for the business which soon came to them fell far short of the requirements. They began with two buildings, and employ from 130 to 150 hands. Their plant covers 20 acres of ground, and the company have a paid up capital of $100,000, but there is invested in the business $380,000. T. M. Avery of Chicago is the president, F. M. Avery treasurer and E. D. Tuttle superintendent. The articles manufactured are rolled sheet brass, german silver, gold bronze and all special alloys, also rolled embossed metal, sheet copper, boiler bottoms and sides, aluminum pure and alloyed aluminum bronze, organ reeds and boards, and specialties not catalogued. The manufacture of organ reeds was only recently begun. Special machinery, devised by the company and constructed on the premises, has been put in. The intention is to manufacture organ reeds and boards in sufficient quantities to supply the increased demand of the Western market. The raw copper which the company use in their brass and other metal work comes from the Lake Superior country, and the zinc from Illinois and Missouri. The present product of the company is mostly shipped, a considerable portion of it, however, being used by the Lane and Scotford manufacturing companies of Kenosha in making the numerous articles which they turn out. The company have their general offices at No. 76 Monroe street, Chicago. Thomas M. Avery, the president of the company, is also president of the Elgin Watch Company of Elgin, Ill. F. M. Avery, the treasurer and manager, is a son of Thomas M. Avery, and has charge of the general office in Chicago. E. D. Tuttle, who is in charge of the factory, has had 25 years' experience in the manufacture of brass, having spent most of his time with the Scoville Mfg. Company of Waterbury, Conn. He is also president of the Lane Mfg. Company, another of Kenosha's new enterprises, and one that owes much of its success to him.

The Lane Mfg. Company were organized two years ago with a capital of $40,000, which has been twice increased, and is now $150,000. The first building erected was a two-story structure 28 x 154 feet, with a wing 30 x 80 feet, and this was amply sufficient for the business done at the start. Subsequently, however, the main building was extended until its dimensions became 28 x 345, a wing was added 20 x 52 feet, another 200 feet long, and still another 190 feet. All of these are filled with machinery, which is run by a 150 horse-power engine, and 230 operatives are employed. The company manufacture brass curtain-pole trimmings, wood curtain poles and rings, brass upholstery goods, brass and wood novelties, the Aurora and Magnum central draft lamps and founts, and a number of specialties in metal goods. The annual product amounts to between $200,000 and $250,000 in brass goods and between $50,000 and $60,000 in wooden goods. The business is constantly increasing, and the capacity of the factory since the above enlargement is being taxed to meet the demand. The product goes to all parts of the country, no inconsiderable part of it reaching the Pacific Coast. One of the chief sources of the success of the concern is the proximity of the Chicago Brass Company, from whom they get a large part of the raw material, and this also enables them to sell their goods at a reasonable figure. The officers of the company are E. D. Tuttle, president, who is also superintendent of the Chicago Brass Company; F. Robinson, vice-president; S. B. Ailen, secretary and treasurer. Fred. Keevan has charge of the lamp works. He came from Cleveland, Ohio, where he was engaged for some years in the same line, and has a long experience in the manufacture of lamps and similar grades of brass goods. The company have a branch office and salesroom at No. 16 Murray street, New York, from which most of the product for the Eastern States is handled.

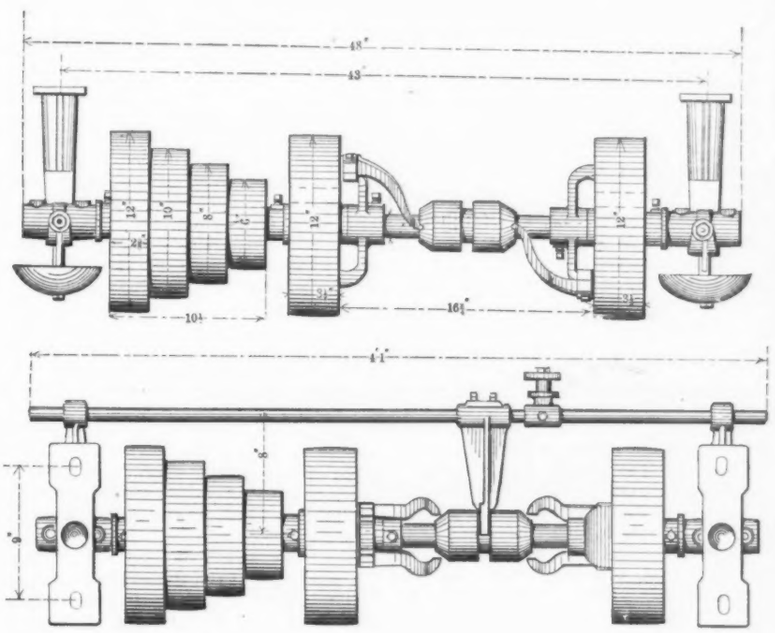


Fig. 4.—Counter-Shaft and Friction Clutch.

TWENTY-FOUR INCH LATHE.

The J. I. Case Establishments at Racine.

The following description of J. I. Case's enterprises at Racine, Wis., are taken from a recently published sketch of that city:

J. I. CASE THRESHING MACHINE COMPANY.

There are few manufacturing establishments in the United States so well and widely known as that of the J. I. Case Threshing Machine Company of Racine, and none of its kind which equal it. Its agencies are scattered all over the country, while the business of the company reaches every part of the world where grain is grown. In 1842 Jerome I. Case settled in Racine, bringing with him from his native State, New York, six small threshing machines bought on credit. Of these he sold all but one, and with this for a time made a living, at the same time studying how he might improve it. In the winter of 1843 and 1844 he built according to his own ideas the first machine made in the West that threshed and cleaned the grain at the same time. So successful was this pioneer implement that Mr. Case determined to enter upon its manufacture, and hired a small shop and went to work. This proving inadequate, in 1849 Mr. Case erected a building three stories high, 30 x 80 feet, near the present site of the company's factories. Large as this building seemed at that time, it was but a small affair as compared with the subsequent extent of the business. The growth of the country and the development of its resources stimulated the demand for agricultural machinery to an unprecedented extent, and the works were enlarged time and again. Realizing the need of assistants upon whom he could rely, in 1863 Mr. Case took into partnership Stephen Bull, M. B. Erskine, and a year later Robert H. Baker. The firm was known as J. I. Case & Co., manufacturers of threshing machines, horse-powers, &c. During the following 15 years the business grew, and the firm became recognized as the most extensive manufacturers of threshing machines in the world. In 1880 the firm was incorporated as the J. I. Case Threshing Machine Company, with a capital of $1,000,000 (they now have a surplus three times that amount), and officered as follows: Jerome I. Case, president; Stephen Bull, vice-president; Robert H. Baker, secretary and treasurer, and M. B. Erskine, superintendent. Mr. Baker was succeeded after six months by Frank Bull as secretary, but continued to serve as treasurer. Mr. Baker died in 1881, being succeeded by C. E. Erskine, who held that position until January, 1890, when Charles H. Lee was elected. The shops and warehouses of the J. I. Case Threshing Machine Company cover more than 40 acres of ground and comprise 15 buildings, with a floor surface of 1,100,000 feet. Over 1000 men are employed, while the pay roll is between $35,000 and $40,000 per month. Beside the well-known Agitator thresher the company manufacture portable, traction and stationary engines; portable saw mills and horse-powers, both tread and rotary; baggers and wagon elevators, straw stackers, &c. The works have a daily capacity of 12 complete separators and horse-powers, and an annual capacity of 700 threshing engines, besides $25,000 worth of supplies. The firm have won a number of medals and diplomas against the strongest competition. Among these are the Centennial

award, 1876; California's gold medal, 1879, and the medal of the Paris exhibition, the only place ever shown outside of the United States. The trade-mark of the company is the American eagle perched upon a globe.

The manufacture of the Whitney patent center-draft plows was begun by Case, Whitney & Co., in 1876. The firm continued until 1879, when it was organized as the J. I. Case Plow Company, with a capital of $150,000. In October, 1885, a new corporation was formed, known as the J. I. Case Plow Works, with a paid up capital of $400,000, and the following officers: J. I. Case, president; Jackson I. Case, vice-president; H. M. Wallis, secretary and treasurer. The entire management was placed in the hands of Mr. Wallis, who is the right man in the right place. Though the business was primarily confined to the manufacture of the Whitney plows, on the last organization of the company other lines were added, and they now include all kinds of steel walking plows, steel sulky and walking plows, a new three-wheeled sulky plow, known as the Triumph, a complete line of chilled plows, harrows, cultivators, listers, &c. The company also originated the lever harrow. The plant covers more than eight acres of ground. The buildings are mostly of brick, three and four stories high, and the company own their own docks and side tracks. About 300 men are employed in the shop, and eight or ten men are constantly employed on the road, though most of the sales are made through jobbing houses. The trade is principally from Indiana to the Pacific Coast. Branch houses are maintained at Minneapolis and Des Moines. The capacity of the factory is about 100 walking plows per day, with other goods in proportion.

The Western Iron Works, Butte, Mont.

On the 1st inst. the Western Iron Works Company of Butte, Mont., removed to new quarters in South Butte, vacating the premises formerly known as the Lexington Foundry. Until quite recently no heavy castings or machinery were made at Butte, but had to be ordered from Eastern or California shops. The Western Iron Works Company propose to supply this local deficiency. They purchased two acres of ground near the Parrot smelter and erected upon that site the new works, which have just been occupied. The buildings are substantially constructed of brick. The foundry building is 72 x 120 feet, and is provided with a new 10-ton power crane that covers an area of 56 feet in diameter; also with a new 4-ton hand-power crane. There has also been erected a new hot-blast Colliau cupola, capable of melting 20 to 25 tons at a heat. The old cupola, having a capacity of 7 to 8 tons, has been set up. An improved brass furnace, capable of melting material for a 500-pound casting, is also another improvement. The machine shop is 52 x 120 feet, and is to be furnished with a new 16-foot boring and turning mill, one 60-inch planer and one 60-inch lathe, besides the old tools that were purchased in the Lexington foundry. This new shop is provided with a basement 52 x 88 feet, which is used for the storage of patterns. The boiler shop is 32 x 72 feet, and has a basement of the same dimensions. It is used for general storage. The boiler and engine room is a building 28 x 48 feet, in which a new automatic cut-off engine, 14 x 24, is placed and also a new boiler, 54 inches in diameter by 16 feet in length, set in solid masonry. The pattern shop occupies a structure 32 x 52 feet and is fitted up with all the best improved machinery. The offices are located in a two-story building. On the first floor are two offices, one of which is used for the transaction of general business, while the other is for the private use of the officers of the company. On the second floor are two rooms. In the larger one are prepared the mechanical drawings. In the smaller one are made the blue prints. This company will own their own electrical plant, which will be capable of supplying 100 incandescent lights.

At these works a general foundry and machine business is carried on. Here the making of all kinds of machinery pertaining to the mining industry is made a specialty—stamp mills, concentrators, water jackets, smelting furnaces and hoist works. This company are the sole manufacturers of Allon & Labram's improved O'Harra roasting furnace, Clark Bros.' improved table for treating slimes from contractors and Lesson & Dowling's patent stamp guide. Chilled car wheels, roll shells and crusher plates will also be made.

The manager of these works, Horace F. Brown, has had 30 years' experience in the foundry and machine business and in the erection of stamp mills, smelters and hoists. The president of the company is J. E. Gaylord; vice-president and manager, Horace F. Brown; secretary and treasurer, W. D. Pinkerton.

The Revivified Northern Furnace.

The Northern Furnace, at Marquette, Mich., which was blown in on the 15th inst. to manufacture charcoal pig iron, has an interesting history, as will be seen by the following sketch, taken from the Marquette *Mining Journal:*

The stack is 50 feet high with a 10½-foot bosh, and is expected to produce between 50 and 60 tons of iron per day when it gets down to business. The blowing engine is of the West Point pattern, with 6-foot stroke and pumping cylinder 6 feet in diameter. The two fly wheels are each 20 feet in diameter. This engine, though placed in the furnace when it was first built, in 1860, is in first-class condition to-day, having seen a service of only 207 weeks, all told, and could supply all the air required for a 100-ton furnace of the same pattern.

Five boilers furnish steam for the plant and five Worthington and Blake pumps, four single and one duplex, handle the water for the furnace. A new Westinghouse Junior engine, of 25 horse-power—with an auxiliary boiler of the locomotive type for use when the furnace is out of blast—furnishes the power for the operation of the crusher and the elevators. The old horizontal elevator engine is still in place for use in emergencies. Of the boilers the two largest are new; the others were taken down from their old position on top of the furnace and also placed in the new boiler house, while the old hot-blast ovens, which were also on top, were abandoned and new ovens built north of the engine room and boiler house. Everything about the furnace plant is now splendidly arranged for convenience and efficiency in operation, the plant being a first-class one in every respect.

The Northern was built in 1860 as an anthracite furnace, the stack being 40 feet high, bosh 16 feet and top 10 feet. It was never long in blast, having only 207 weeks to its credit when it made its last run in 1867. It was then owned by the Hoppocks of New York, and L. D. Harvey. In the '70s over $50,000 was expended in remodeling the furnace and fitting it for service again, but just as the work was being completed the great crash came, and the company went down with everybody and everything else in Marquette. The money then expended in raising the stack, lessening the bosh, building a fine brick and iron casting house, &c, was not wasted, however, as far as the present Northern Furnace Company, organized last May, are concerned. The improvements made were permanent, and everything was found in good shape when, after years of complications over the title, Marquette men finally got hold of the furnace and prepared to put it in blast again.

The stack has been thoroughly modernized on lines laid down by Morris R. Hunt of the Ashland Furnace, the bosh reduced to 10½ feet, a new hot blast put in, the furnace changed from a dry hearth to the ordinary form and many other improvements made, the work being done under the direction of R. H. Jones, who was early selected as the manager of the furnace by the directors, J. M. Longyear, J. M. Wilkinson, F. B. Spear, J. G. Reynolds and N. M. Kaufman. Mr. Jones has a splendid record as a furnaceman, his management of the Newberry Furnace having placed him in the front rank.

The Northern will use Winthrop, Marquette and No. 1 Lake Superior ores, the large stock house being filled now, while about 20,000 bushels of charcoal are on hand. The flux comes from Palms station. Car-wheel iron will be the principal product, the intention being to run the furnace on Nos. 2, 3 and 4 grades. Thirty men will be employed, while the charcoal supply of the furnace, which will use between 4000 and 4500 bushels a day when it is up to its regular work inside a week, will give employment to hundreds of others and will assist many a Marquette county farmer to clear up more land at a profit—in fact, the farmers in the Chocolay region are already turning out about 20,000 a month and are building more kilns. F. B. Spear, by whose efforts the present Northern Furnace Company were organized and the furnace newly equipped and started on a fresh career of usefulness, is entitled to the credit of contributing another factor to the growth and prosperity of Marquette, another industry to hasten the advancement which is already making her name known throughout the country.

A miniature of the steamship Tuscarora, the latest built of a fleet of eleven steamships running on the lakes as feeders for the Lehigh Valley Railroad Company, is exhibited at the window of an office in Broadway, with the claim in her behalf—"Queen of the great chain of lakes." The original vessel is 308 feet long over all, 40 feet beam, 25 feet 6 inches depth of hold. She has three steel decks, six water-tight compartments, and a water bottom capable of holding 800 tons. This ship's cargo capacity is 3000 tons or 100,000 bushels of wheat on 16 feet 6 inches draft of water. Her engines are triple expansion, driven by steam from three Scotch boilers, capable of developing 2200 horse-power, which gives her an average speed of 16 miles an hour. The line will soon have an independent connection with tide water at Jersey City.

The report of the engineer officers detailed to watch the performance of the engines of the cruiser Newark, on her recent trial trip, shows an indicated horse-power of about 9000, an excess of 500 horse-power over the contract requirements, thus entitling the contractors to nearly $50,000 premium.

The increased yield of cotton in the delta of the Nile is due to the improved system of irrigation introduced by the British, on which large amounts have been expended, but there are doubts whether the area under cultivation can be greatly extended. One estimate of the limit of the crop is about 100,000 bales in excess of any year's yield yet recorded.

The World's Money.

Mr. Leech, the Director of the Mint, has prepared for the House Committee on Coinage a series of interesting tables showing the gold and silver estimated, and officially reported to be in circulation as money throughout the world, and the specie holdings of the leading European banks. The most comprehensive table is the following:

Approximate Amount of Gold and Silver Money in the World.

Country.	Gold.	Silver.
United States.....	$702,018,869	$482,071,346
United Kingdom..	550,000,000	100,000,000
France.....	900,000,000	700,000,000
Germany.....	500,000,000	145,000,000
Belgium.....	65,000,000	55,000,000
Italy.....	140,000,000	60,000,000
Switzerland.....	15,000,000	15,000,000
Greece.....	2,000,000	4,000,000
Spain.....	100,000,000	125,000,000
Portugal.....	40,000,000	10,000,000
Austria-Hungary..	40,000,000	90,000,000
Netherlands.....	25,000,000	65,000,000
Scandinav'n Union	32,000,000	10,000,000
Russia.....	190,000,000	60,000,000
Turkey.....	50,000,000	45,000,000
Australia.....	100,000,000	7,000,000
Egypt.....	100,000,000	15,000,000
Mexico.....	5,000,000	50,000,000
Central America..	.....	500,000
South America....	45,000,000	25,000,000
Japan.....	90,000,000	50,000,000
India.....	.....	900,000,000
China.....	.....	700,000,000
The Straits.....	.....	100,000,000
Canada.....	16,000,000	5,000,000
Cuba, Hayti, &c..	20,000,000	2,000,000
Totals...	$3,727,018,869	$3,820,571,346

The silver money is classified by Director Leach, in the following table, into that which is full legal tender and that which is tender for but limited amounts:

	Full legal tender.	Limited. tender.
United Kingdom...	$.....	$100,000,000
France.....	650,000,000	50,000,000
Germany.....	102,000,000	43,000,000
Belgium.....	48,400,000	6,600,000
Italy.....	25,800,000	34,200,000
Switzerland.....	11,400,000	3,600,000
Greece.....	1,800,000	2,200,000
Spain.....	90,000,000	35,000,000
Portugal.....	.....	10,000,000
Austria-Hungary...	90,000,000	.....
Netherlands.....	61,800,000	3,200,000
Scandinavian Union	.....	10,000,000
Russia.....	22,000,000	38,000,000
Turkey.....	.....	45,000,000
Australia.....	.....	7,000,000
Egypt.....	.....	15,000,000
Mexico.....	50,000,000	.....
Central America....	500,000	.....
South America.....	25,000,000	.....
Japan.....	50,000,000	.....
India.....	900,000,000	.....
China.....	700,000,000	.....
The Straits.....	100,000,000	.....
Canada.....	.....	5,000,000
Cuba, Hayti, &c....	1,200,000	800,000
Totals.....	$2,929,900,000	$408,600,000

The total stock of full legal tender silver coin in Europe is given at $1,101,400,000.

The business of the Berlin Iron Bridge Company of East Berlin, Conn., has increased so rapidly in the last few years that the stockholders deemed it advisable at the annual meeting on Monday, the 19th, to increase the capital stock from $125,000 to $300,000. The entire increase has already been subscribed for by the present stockholders. The additional capital will be used to improve their plant at East Berlin, and the company will immediately put up a new building 80 feet wide by 600 feet long, and expect to have it equipped with machinery and in running order by the 1st day of July. During the past few years this company have been compelled to run their works day and night during a greater portion of the time, but with their improved facilities they will be able to do 25 per cent. more work than they have been doing and not run their plant over 10 hours per day. They have shipped during the past year 8000 tons of iron work, consisting of iron bridges, iron buildings and iron roofs. Their sales amounted to nearly $1,000,000 and their work was put up in nearly every State in the Union. The company have now regular established agencies in San Antonio, Texas; Binghamton, N. Y.; Buffalo, N. Y.; Pittsburgh, Pa.; Raleigh, N. C.; Dayton, Ohio; Enterprise, Miss., and Omaha, Neb.

Cast-Iron Tools for Cutting Metals.

Oberlin Smith of the Ferracute Machine Company, Bridgeton, N. J., has called attention, in a paper read before the American Institute of Mining Engineers, to the use of cast-iron tools, with chilled cutting edges, for lathes, boring mills, &c., accompanying it with drawings of the tools, with dimensions. We quote from it the following:

In this country, the Pennsylvania railroad shops at Altoona have taken the lead in the use of such tools, and have very successfully employed them since they were introduced, some 20 years ago, by Peter Moore, who was then with the Pennsylvania Railroad Company. They are in use to some extent at various other shops, including that under my own control; but there are no definite data at hand regarding their increasing employment. Mechanically, but little description of these tools is necessary. They are made to the ordinary standard shapes used for forged tools.

For a given size of cut, the shank of one of the tools should be somewhat larger than in the case of a forging, in order to give the required lateral strength where it is fastened in the tool post. Otherwise the shapes and sizes may be exactly the same. In general, heavier cuts and probably somewhat higher speeds can be taken with these tools than with forged steel ones, for the reason that there is no danger of drawing temper by the heat due to cutting friction.

The experience of the Pennsylvania Railroad Company shows that, on the whole, these tools, cheaply made as they can be, are superior to steel tools for roughing cuts, but that they are not desirable for finishing cuts They will not hold a fine edge, because tiny pieces break off all along the cutting edge—thus leaving them too rough for producing a smooth surface upon the work. This breaking occurs to a still greater extent when the work is serrated, or otherwise broken into a non-continuous surface, as in the teeth of gearing, &c. The trouble in such cases is caused by the "backlash," giving the frequent and violent blows to the edge of the tool. That, on the whole, they are superior tools for roughing cuts upon wrought iron, mild steel, steel castings, cast iron and bronze is shown conclusively by the circumstance that men working by contract elect to use them in preference to steel tools. With the above conclusions my own somewhat limited experience entirely agrees, although we have been using the cast-iron tools but a comparatively short time at the shops of the Ferracute Machine Company.

The construction of these tools is obviously of the simplest description. An ordinary wooden pattern of the exact shape desired is molded in the usual way, with a small portion of its cutting point in a cast-iron chill. The exact proportions are of no consequence. The tools, of course, cannot be repaired in the blacksmith shop, but must be melted up when worn out by breakage or frequent grinding. The latter, by the way, is best performed on emery wheels rather than grindstones. These tools, however, can be so cheaply recast that their maintenance, as well as their original cost, is much less than of the ordinary forgings. The best composition of metal, as far as has been ascertained, is the same as for car wheels, and no particular care is necessary in regard to the method of pouring or the heat of the melted metal. The table given below contains some data regarding the standard metal at present used by the Pennsylvania Railroad Company for its car wheels, and also for these tools:

Mixture of Iron and Steel Rail for Making Cast-Iron Chilled Car Wheels and Cutting Tools.

Brand.	Kind.	Per cent. used of each brand.	Chemical analysis.				
			C.	Mn.	P.	Si.	S.
Greenwood..	Charcoal.	5	3.61	0.41	0.43	0.74	....
Lime Rock..	"	10	3.60	0.85	0.33	0.98	....
Richmond..	"	5	3.52	1.09	0.28	0.92	....
Shelby.....	"	5	3.61	0.23	0.46	0.70	....
Raven's Cliff	"	5	3.89	0.27	0.16	0.50	....
Glendon ..	Anth'cite	10	3.65	0.41	0.64	1.23	0.03
Steel rail....	"	5	0.40	0.85	0.09	0.03	0.03
Old wheels..	"	55	3.50	0.52	0.42	0.75	0.08

Weighing Coal Before Screening.—The United Mine Workers, in session at Columbus, Ohio, last week, adopted the following: "*Whereas*, The system of screening coal now in vogue tends to encourage employment of unskilled miners, thereby creating a surplus of men, depriving the practical and skilled miners of the opportunity of earning a sustenance for himself and dependents; and, *Whereas*, Incompetency is encouraged, there being no incentive for the operators to procure the services of our skilled brothers; and, *Whereas*, The wanton waste of coal injures our craft and is a detriment to the operators' society; therefore, *Resolved*, That we favor the weighing of all coal before screening; and, *Resolved further*, That on such coal we make a scale on Hocking Valley of 57½ cents per ton."

Debt of the Dominion.—The increase of the public debt of the Dominion is the subject of much adverse criticism on the part of the opposition to the present ministry. Since the return to power of the Conservative party, in 1878, the net debt of Canada has been carried up to $237,533,211, at which it stood at the close of last June, an increment of $97,171,142, or an average annual increase of $8,097,000 during the last 12 years. The organ of the existing Government says, in defense: "In the last ten years the Canadian Pacific Railway has been built, and the contributions to the work from public funds have amounted to no less than $61,940,000. The value of such an investment from a national point of view needs not to be argued at this day, but it is worth while pointing out that, apart from the subsidies to the Pacific Railway, the net debt of Canada on June 30 last amounted to only $175,592,000, or $33.80 per head of the population; while in 1880 the net debt was $35.90 per head, showing a relative decline in the public debt, exclusive of the item of the Canadian Pacific Railway, as to the wisdom of which both political parties are now agreed."

The foundations are being laid at Irwin, Pa., for plate-glass works, which, it is said, will be the largest in the world. The firm will be known as the Pennsylvania Glass Company.

The trade schools attached to the Massachusetts reformatories during the last two years are proving highly beneficial.

The Gates Improved Concentrator.

Illustrations are presented herewith of a new concentrator adapted to the separation of gold, silver, copper, tin, lead and other ores which has just been brought out by the Gates Iron Works, 50 South Clinton street, Chicago. Those who are familiar with the treatment of ores of this character will appreciate the desirability of a machine that will take crushed ore without sizing. The Gates machine has been very thoroughly tested, and demonstrations of its efficiency are daily made in the model room of the works, where a machine of this character is in use engaged in sampling ores.

Fig. 1 shows the machine with the "headings" end in the foreground. The cylindrical top is the hopper into which the crushed rock is placed, previously pulverized to pass through a 30-mesh screen. The rock escapes through the bottom of the hopper by a longitudinal opening into which a roller fits, whose rotation causes the rock to be fed into the pan gradually. The pan covers the bed of the machine and has a slight slope. The tube shown in the foreground conveys a supply of water into a copper reservoir with a bottom having transverse corrugations, with perforations in the corrugations, gradually increasing in size from the rear row to the front.

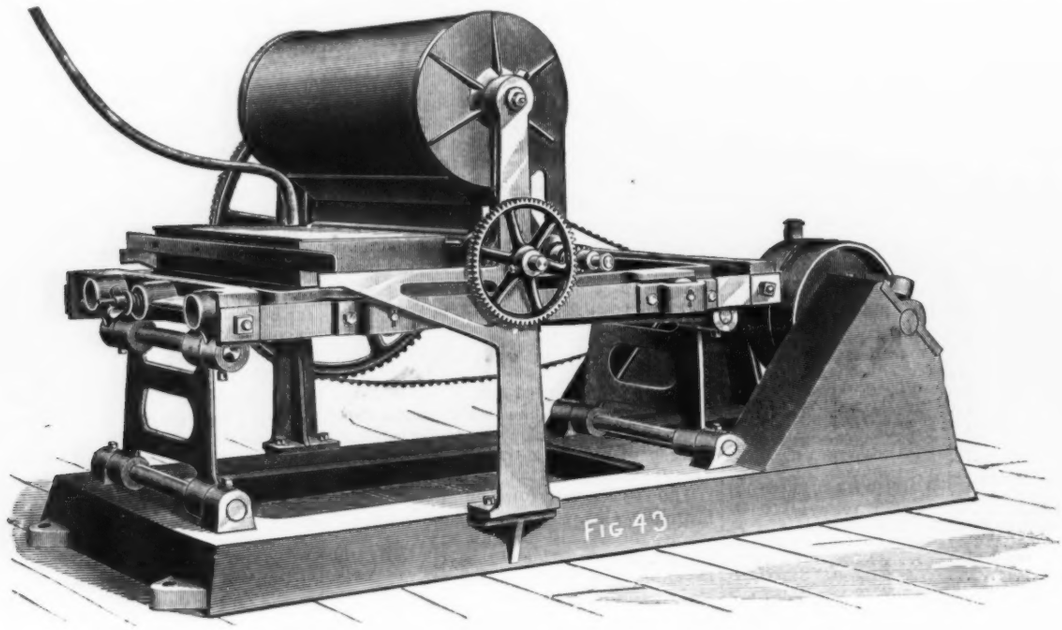


Fig. 1.—*Headings End.*

THE GATES IMPROVED CONCENTRATOR.

Fig. 2 shows the "tailings" end of the machine and the eccentric gearing to impart motion to the pan, which is supported on jointed uprights. When the machine is in motion the pan oscillates in a manner similar to the ordinary percussion table, the violence of the percussion being regulated by a spring and thumb screw shown at the end of the table in Fig. 1. As soon as the stream of crushed rock strikes the pan into which water is flowing from the copper reservoir, the metal concentrates start up to the head of the pan, and the gangue passes down. The concentrates are washed over the head of the pan into a suitable receptacle, and the gangue passes down and out at the other end of the machine. It is claimed that with this concentrator no subsequent operations are necessary "to save the slimes." When the tailings leave the machine they are not worth further treatment. It is made entirely of iron and copper, is well finished and thoroughly durable. It is adjustable at all points where necessary. The whole machine weighs about 800 pounds, can be transported by mule or otherwise, requires about 120 gallons of water per hour, will handle from 2 to 4 tons per day, according to the quality of work desired, and can be operated with but half of 1 horse-power.

The Stevens Institute Alumni Association.

The midwinter meeting of the Alumni Association of the Stevens Institute of Technology, held on Tuesday evening, 20th inst., was an affair of more than usual interest. Quite a number of invited guests were present, including three ex-presidents of the American Society of Mechanical Engineers, Horace See, Geo. H. Babcock and Oberlin Smith; C. J. H. Woodbury of Boston; M. N. Forney, editor of the *Railroad and Engineering Journal*; W. H. Wiley of New York, and Colonel Stevens of Hoboken, son of the founder of the institute. Nearly 100 of the graduates were present, the earlier classes, '75, '76 and '77, being well represented, as well as the later classes.

The meeting was presided over by William Kent of the class of '76, who had recently been elected to the position of Alumni Trustee for the term of three years. After some routine business the chairman opened the discussion on the subject, "Should the Institute's Course be Extended from Four to Five Years?" which had been proposed by the Executive Committee of the alumni. He stated that the question was only one branch of a broader question, "How may the course of instruction be improved?" and as an introduction to it he spoke of the past career of the institute and of the increasing demands made upon it for a larger number of graduates and for their better education. He spoke in part as follows:

"It is only 20 years ago that Stevens Institute was founded. The first class, of only three members, was graduated in 1874. The class of '76 had 17 members, and it was considered a large one. There were not in those days, as at present, opportunities for the graduates to immediately secure good positions. One of that class started at the bench in a railroad machine shop at 50 cents a day, another started in a car shop at 90 cents a day, and a third did not get a start until a year after he graduated, and then he began in the machine shop of a steel works at about a dollar a day. Each of these men steadily advanced, so that in a few years he held a responsible and lucrative position. But times have changed. Many of the older graduates are now at the head of engineering establishments, scattered over the country, and they are calling for the younger ones to be their assistants. It is not an uncommon thing now for every member of a graduating class to have a position assured him before the day of graduation.

"Some of the older members of the profession, who have reached the highest position the profession offers without ever having had the advantages of a technical course, may still look askance at the college, and believe that the proper course of training of a mechanical engineer begins in the foundry cleaning castings, and proceeds through the machine and pattern shop and the drafting room up to a foremanship, and thence to higher honors. Such men were numerous 15 years ago. They are now very few, and those who are left are fast being converted to believing in the new order of things, in which neither the foundry, the pattern shop, the machine shop or any other department of practical work is despised or left out, but in which the training in a technical college is an absolutely essential part of the course. The demand comes for more men, and better educated men than ever before. How shall the technical college respond to this demand? This is the real question we have to discuss, and the one proposed by the Executive Committee, shall Stevens increase her course to five years, is only a branch of it.

"I will not take sides upon the narrow question whether Stevens should establish a five-year course, but I think I can safely say she either must do so or else

she must continue to do as she has done, gradually raise the standard of admission, making it more difficult every year to enter the freshman class, which means increasing the average age of the entering student, and requiring more work to be done in the preparatory schools. But whatever way this question is decided, Stevens must be improved. She must have a better equipment in her laboratories. She should have a new chemical and metallurgical laboratory, and more opportunity must be given for the prosecution of original research. And then the main question arises. How is all this to be done? Where is the money to come from? Where is the Fayerweather or the Fogg who will increase the endowment of the college. This leads me to make the sad confession that Stevens is poor. If it is no disgrace for an individual to be poor, still less is it for a college. In fact, all colleges are poor. A Harvard professor once told me when I was congratulating him on the great wealth of his university, 'Why, Harvard is poor, she always will be poor. No college is filling the full measure of its usefulness unless it is poor. It must always spend all its income, and always have new scholarships, professorships and fellowships to be endowed whenever its income increases.'"

Professor Denton of the Stevens Institute continued the discussion by explaining why a demand has arisen for a five years' course. The freshman when he enters the college is very imperfectly equipped to begin the course, and therefore much time must be given to his instruction in mathmetics and mechanics before the actual study of engineering theory can begin. As the theory must precede the teaching of engineering research and practice, the four years' course has ended before these latter are fairly begun. A fifth year course for selected students or a post-graduate course would in some measure be a remedy for the difficulty.

A. W. Humphreys, superintendent of the United Gas Improvement Company of Philadelphia, who has in his employ several Stevens graduates, then stated as the result of his experience that he had obtained from them the best kind of assistance. He believed that the institute course should be such as to give the students a thorough training in theory, the more thorough the better, and for that reason a five years' course would be better than a four years' one. The young graduate would soon gain the practical experience after he left the college, which would make up for the lack of it in the college course.

Horace See, G. H. Babcock and Oberlin Smith, all of them ex-presidents of the American Society of Mechanical Engineers, and Mr. Woodbury, vice-president of the society, then took part in the discussion, the view being generally taken that if a four years' course was good, five years was better, but that there might be financial difficulties in the way, both of the college and of the student. The college would need more rooms and more professors to handle the larger number of students, and the delay in a student's beginning to make his own living would in many cases be a serious objection.

President Morton then gave a brief history of what the institute had done, showing that there had already been practically a year added to the course by continually advancing the standard of admission, so that the freshmen entered the college a year further advanced than formerly, and that the tendency was still in the same direction, with the view of ultimately making the technical course a post graduate course, coming after graduation from the academic college. It would not be possible with the present accommodations in Stevens Institute to give an actual five years' course.

M. N. Forney then followed with an address on the existing defects in technical college training. He said that students are frequently graduated with an insufficient knowledge of the English language, and that more thorough training should be given in English, so that a student would be able to express himself in writing correctly and fluently, and to speak readily in public whenever called upon. He spoke of the necessity of more physical culture, to give sound bodies with sound minds, and quoted the statement that a good set of bowels is of more importance to a man than a highly cultivated brain. He advocated the development of the reasoning powers, through the study of logic, and suggested that instruction should also be given in the ethics of engineering, in order to instill into the mind of the student those principles which would enable him to resist the temptations apt to be thrown in the way of an engineer through attempts at bribery and business and political corruption.

Alfred R. Wolff, class of '76, continued the discussion of the suggested five years' course, giving arguments on both sides of it, as did most of the other speakers, and it was closed by Prof. De Volson Wood, who said that a three years' course might be sufficient if the course were made strictly a professional one, the first two years of the present course being taken from the institute and relegated to the preparatory schools. The necessary length of the technical course depended upon the preparation the student obtained before entering upon it. It was agreed that a most valuable feature had been introduced into the alumni gatherings by inviting engineers who have distiguished themselves in practical work to address the alumni, and regrets were expressed at the absence of professors from other colleges who had been invited to be present. The subject of the improvement of the course of the technical schools is one upon which it would be well to hold a conference of such schools, and it is to be hoped that such a conference may be held in the near future.

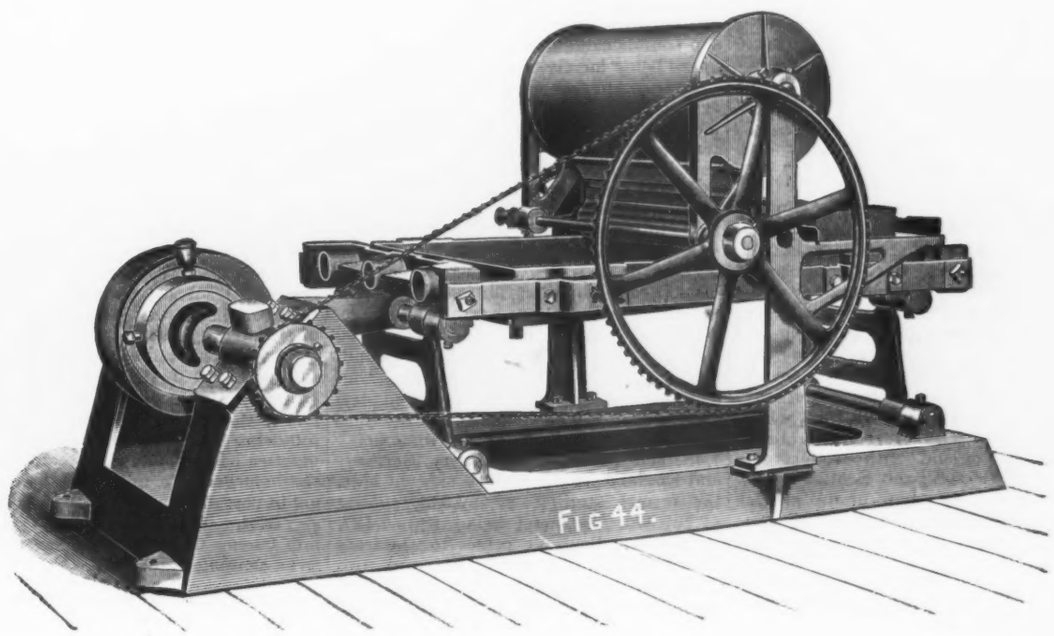


Fig. 2.—Tailings End.

THE GATES IMPROVED CONCENTRATOR.

England is more dependent every year on imports of beef from the United States. More than three-fifths of the 500,000 cattle imported annually come from this country, the remainder from Canada. Last year 123,000 head were shipped from the St. Lawrence.

The Cowles Aluminum Company, at Lockport, N. Y., reduced the price of the metal to $1.25 per pound, and resolved to enlarge the works. Reports are current that this price can be severely cut.

Our Imports of Iron.

THE SOURCES OF SUPPLY.

The Bureau of Statistics has lately published its usual annual volume covering the year ending June 30, 1890, which gives in detail statements showing the origin of all the leading articles exported from this country. While, of course, the data in question have little bearing upon trade movements at the present time, they do convey information of utility, though general in its character. Iron ore was imported in the following quantities from the countries named:

Imports of Ore.

From.	Tons.
France	3,316
French possessions in Africa and adjacent islands	115,428
England	61,084
Scotland	3,994
Nova Scotia, New Brunswick and Prince Edward Island	348
Quebec, Ontario, Manitoba and the Northwest Territory	8,764
British Columbia	4,575
Greece	43,669
Newfoundland and Labrador	16,320
Italy	117,245
Portugal	12,839
Spain	482,551
Cuba	287,332
Total	1,157,395

The principal sources of our foreign ore supply continue to be, therefore, Sardinia, Greece, Spain and Cuba, while a notable quantity comes from the West Coast of England, consisting of such high grade of hematite as the Hodbarrow. In pig iron, which, unfortunately, in the statistical reports includes ferromanganese and spiegel, the following countries contributed the principal amounts: Germany, 27,163 tons, valued at $599,190, which shows that the bulk of it was probably spiegeleisen; England with 82,730 tons, valued at $2,295,037; and Scotland with 27,462 tons. Of high-grade special Swedish pig the imports were 3112 tons, the whole amount of pig iron being 146,772 tons.

Scrap iron, as usual, is widely distributed, coming as it does from countries which have no facilities for reworking old material. The total quantity imported was 36,727 tons, of which 9505 tons came from England, 3298 tons from Germany, 6503 tons from the British East Indies, 4729 tons from Mexico, 1172 tons from the Argentine Republic, 1250 tons from Brazil, 1250 tons from China, 1968 tons from France, 1031 tons from British Columbia, 1613 tons from Cuba, and 1436 tons from Sweden and Norway. The amount of scrap steel imported is surprisingly small, being reported as only 2132 tons, of which Canada is credited with 1125 tons, England with 550 and Scotland with 456 tons. It is somewhat difficult to escape the conclusion, in view of the fact that open-hearth melting stock has been imported in somewhat considerable quantities, that what is really scrap steel is entered as scrap iron.

In bar iron by far the greater part of the imports come to us from Sweden and Norway, as representing the high class of material used for a large variety of special purposes. Of the 64,125,976 pounds imported, not less than 52,180,170 pounds came from the countries named. Belgium contributed 4,931,652 pounds; England 4,524,798 pounds; Germany, 1,382,140 pounds, and Denmark, 1,076,175 pounds. So far as we know, there are no rolling mills in the latter country, and it is probable that the quantity credited to it, as in a number of other cases, represents merely transshipment trade.

Cotton ties, of which we imported 44,621,533 pounds, came almost entirely from England, to which country also must be credited a greater part of the imports of steel hoops, bands, strips and sheets. The total was 18,702,580 pounds, of which England sent 11,381,243 pounds and Scotland 6,842,881 pounds.

The imports of crude steel in the form of billets, slabs and bars aggregated 36,337 gross tons. It is of interest to note that the largest exporter was Scotland, with 12,917 gross tons, followed by England with 10,879 gross tons, and by Germany with 7544 gross tons, Belgium sending only 932 gross tons. The quantity shipped by Sweden was 3974 tons, which is somewhat larger than is usually assumed.

Sheet, plate and taggers' iron came to us to the extent of 16,978,263 pounds, England again taking the lion's share with 15,755,960 pounds, while Russia appeared in the list with 1,167,879 pounds. The latter figure probably represents the whole quantity of genuine Russia iron consumed in this country.

Of tin plate the imports were 180,060,925 pounds, valued at $20,928,150. Nearly all of it came from England, while 1,094,836 pounds came from Canada, the latter figure being merely transshipments.

Sweden appears again as a very heavy exporter in the article of rivet, screw, nail and fence wire rods, of which the total was 62,347 gross tons. The country named is credited with not less than 27,698 gross tons, which is nearly double that of Germany with 15,252 gross tons, England following with 10,786 gross tons, Belgium with 8045 gross tons and France with 507 gross tons.

Of the total of 9,589,140 pounds of wire England has supplied 8,001,407 pounds. The same country leads in anvils, axles and forgings, taking 2,463,310 pounds out of a total of 3,162,305 pounds. Germany, however, is first in iron and steel chains, with 872,548 pounds, against England with 580,692 pounds, the total being 1,485,606 pounds. In cutlery Germany and England stand almost side by side, the former sending $1,252,572, against $1,201,576, the total being $2,532,437. In firearms Belgium comes to the front with $989,431, followed by England with $303,189, the aggregate being $1,388,268. In machinery England controls the bulk of the trade, with $2,148,593, out of a total of $2,831,264.

THE PORTS OF ENTRY.

The volume before us goes into details also on the imports of foreign merchandise as distributed by customs districts and ports into which they are entered. The figures furnish some food for reflection as bearing upon the distribution territorially of the foreign material received.

In iron ore Philadelphia leads, with imports of 660,361 tons, of which all probably is used in the furnaces of Eastern Pennsylvania. Baltimore is entered with 421,632 tons, the greater part of which was probably destined for the Pittsburgh and Wheeling districts, since Sparrow's Point was not running. New York and Perth Amboy are credited with 38,871 and 23,076 tons respectively, smaller amounts of no consequence being distributed among other ports. The total sums up 1,157,395 tons.

Two-thirds of the pig iron and manganiferous material is entered into New York, the figure being 105,436 tons, out of a total of 146,772 tons. Baltimore received 16,783 tons, of which probably the greater part is manganiferous material for the Pittsburgh district, while Boston is credited with 3284 tons, apparently representing its imports of Scotch pig. Philadelphia comes in with 3918 tons. The Pacific Coast ports, which depend for their foundry iron largely upon foreign material, are credited with the following amounts: Puget Sound, Wash., 2081 tons; San Francisco, 12,789 tons, and Willamette, Ore., 1196 tons. Half of the scrap iron imported—36,727 tons—enters San Francisco—*i. e.*, 18,292 tons, New York receiving 11,815 tons and Philadelphia 4104 tons.

New England receives a very large share of the bar iron imported, which, as we have seen before, consists principally of high-grade Swedish stock. Of the total of 64,125,976 pounds, Boston receives 27,150,833 pounds, New York takes 29,298,304 pounds, Philadelphia 1,301,798 pounds, Pittsburgh 2,643,835 pounds, St. Louis 1,158,586 pounds and San Francisco 2,027,559 pounds.

Cotton ties or hoops for baling purposes, of course, go almost entirely to Gulf and Southern Atlantic ports. New Orleans received 23,053,376 pounds, Galveston 7,374,183 pounds, Norfolk 1,792,000 pounds, Savannah 4,354,406 pounds, while New York imported 6,814,500 pounds. Of steel hoops, bands and sheets New York takes more than one-half, or 10,230,376 pounds, out of a total of 18,702,580 pounds. Boston comes in for 3,428,053 pounds and San Francisco for 3,470,788 pounds. Of steel billets and slabs Baltimore receives 3539 gross tons, the bulk of it probably for the New England wire mills; New York, 14,949 gross tons; Philadelphia, 898 gross tons; St. Louis, 653 gross tons, and San Francisco 4056 gross tons, the total aggregating 36,337 gross tons.

Sheet, plate and taggers' iron come principally to New York, the quantity being 10,644,315 pounds, Philadelphia following with 2,473,012 pounds, and Boston with 1,267,284 pounds.

In tin plates the imports statistics as distributed by customs districts at which they were received are of particular interest, because it is in this article that the custom is almost general of importing direct to the interior cities in bond. The following table shows how general this practice has become, there being hardly a single large place in the West which does not import direct. We may call attention also to the quantities of tin plate imported into Pacific Coast ports where there is a large canning industry.

Imports of Tin Plates, Terne Plates or Taggers' Tin.

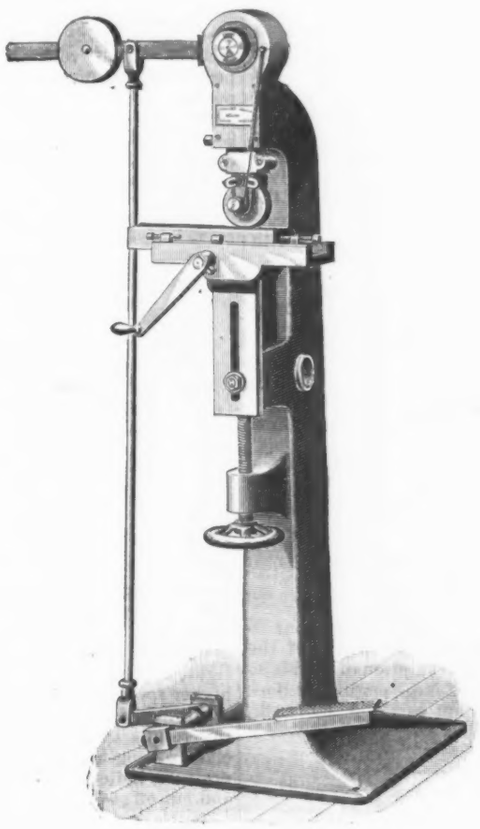
Customs districts and ports into which imported.	Pounds.
Baltimore, Md.	95,600,977
Boston and Charlestown, Mass.	25,407,199
Buffalo Creek, N. Y.	4,099,547
Chicago, Ill.	45,154,487
Cincinnati, Ohio.	2,233,370
Columbus, Ohio.	309,355
Cuyahoga, Ohio.	1,045,039
Denver, Col.	814,448
Detroit, Mich.	1,441,721
Galveston, Texas.	1,440,222
Grand Rapids, Mich.	217,108
Huron, Mich.	1,063,006
Indianapolis, Ind.	3,861,999
Kansas City, Mo.	6,241,357
Louisville, Ky.	880,282
Memphis, Tenn.	126,456
Miami, Ohio.	2,281,261
Milwaukee, Wis.	6,625,225
Minnesota, Minn.	2,323,529
New Haven, Conn.	108,585
New Orleans, La.	16,378,573
New York, N. Y.	274,435,722
Omaha, Neb.	2,542,642
Oregon, Ore.	3,908,836
Philadelphia, Pa.	106,234,336
Pittsburgh, Pa.	4,936,681
Portland and Falmouth, Me.	4,573,527
Providence, R I.	607,819
Puget Sound, Wash.	415,800
St. Joseph, Mo.	1,796,001
St. Louis, Mo.	14,217,368
San Diego, Cal.	220,752
San Francisco, Cal.	43,204,906
Willamette, Ore.	5,178,601

Wire rods entered chiefly through New York, with 40,168 gross tons; Boston, with 11,031 gross tons; San Francisco, with 7070 gross tons, and Philadelphia, with 3793 gross tons. Wire and wire rope came in as follows: Through New York, 3,487,221 pounds; St. Louis,

2,225,452 pounds; San Francisco, 1,261,293 pounds, and Boston, 1,069,926 pounds. New York does the bulk of the business in anvils and forgings, bringing in 1,133,844 pounds. The same is true of chains, of which it imported 1,232,984 pounds out of a total of 1,485,606 pounds, and of cutlery, of which it received $2,133,356 out of a total of $2,532,437. Over one-half of the machinery imported enters Boston, the amount being $1,419,070 out of a total of $2,831,264, New York following with $926,833. In firearms New York receives the greater part, or $980,845 out of $1,388,268, St. Louis following with $124,368 and Philadelphia with $59,635.

The Dwight Marking Machine.

This machine is adapted, by means of steel dies, to impress on flat or round



THE DWIGHT No. 2 MARKING MACHINE.

finished metal surfaces, letters, numbers, trade-marks, &c. The machine is similar to the No. 1 machine built by the Dwight Slate Machine Company of Hartford, Conn., but heavier work can be done with it and it has arrangements for finer adjustment of depth of impression in work, increased travel and capacity, especially on flat work. The first machine of this kind was designed for marking on micrometer frames the decimal equivalents of the fractional parts of an inch, which gives an idea of the quality of work it will do.

The die holder is held by a set screw in the lower end of a square slide, into the upper end of which is fitted a connecting arm through which an eccentric or cam shaft is placed. To the cam shaft the weighted arm is keyed, which, as shown, is further connected with the foot lever. The die holder provides bearings, front and rear, for the die shaft. A latch piece hinged to the die holder and dropping into a slot in the side of the shaft prevents lateral motion, and provides for quickly taking out shaft and shifting the dies. The die shaft and die are connected by keyway and feather. On the front end of the shaft a groove is turned, in which a piece of cord connected with a light spring is wound up as the die is doing its work. When contact of die and work is broken, the shaft and die are revolved by the tension of the spring until a fixed pin in the shaft comes in contact with a pin in an adjustable washer. This washer, which fits on the shaft and is held in position by a circular slot and set screw, is shown in the cut.

The adjustment secured by this washer and pin enables the operator, when setting up the machine, to bring the character on the die which should strike the work first to a position at right angles with the face of the work at once, and insure its returning there after each impression by means of the spring, &c. A piece of flat work to be marked is placed on the sliding table, which is moved by rack pinion and crank, in a simple fixture provided with gauge pins to locate it in position under the die, and resist the end thrust. The travel of the table is regulated by a projecting dog on the same and the two adjusting screws shown, which should be so set as to stop the movement of the table as soon as the die has revolved far enough to bring the last character to a position of full impression. The regulation of the first end of the impression by the pin, and the last end by the adjusting screw, insures a clear cut beginning and ending of mark.

The die and slide, when standing at their normal positions, are at their extreme down throw, and the office of the foot lever is to raise the die so that work can be inserted. The position of the weight on the arm determines the amount of impression when the work varies in thickness. When work is got out to uniform thickness, a set screw that will regulate the drop of the weighted arm is provided, and the impression can be sunk to an exact depth each time. When the work varies in thickness, the impression will depend on adjustment of weight. When marking round work, as reamers, taps, &c., a flat die is used, the work being placed against a little angle piece to insure its laying at right angles with die; the die is brought in contact with the work and the table given a movement that causes the work to revolve. This method of using the dies requires but comparatively little pressure, and hollow tubes, handle work, chuck and valve bodies can be marked without danger of springing. The extreme travel of the table is 6 inches, and the distance from the center of the die to the frame is 3½ inches.

Silver's Effects on Savings Banks.

The savings banks wherein are stored the accumulated earnings of labor for many years, are menaced as never before by the free coinage agitation. Ex-Comptroller of the Currency William I. Trenholm says: "It seems to me that the passage by the Senate of the Free Coinage bill must have been a surprise to those responsible for it, and will prove disappointing, because it is too crude a measure to become a law in its present shape. The House will soon adopt it as it is, and the President must veto it. If this bill should pass, the whole population will come by the ears, for buyers will be entitled to pay in one kind of dollars, and sellers will be equally entitled to claim the other kind. It strikes me that this provision has not been carefully considered, because it is apparently unjust, and is likely, moreover, to bear with especial hardship upon a large and defenseless class of people. I mean depositors in savings banks. There are nearly 1000 savings banks in the United States, and they owe their depositors over $1,500,000,000, representing that much in gold value saved by poor people out of their earnings, received by the banks as gold or its equivalent, and presumably invested on a gold basis. Here is a debt that should be held sacred by Congress; yet under the proposed bill these institutions can settle with their depositors in silver, and this will probably be effected with a loss to the depositors of 20 per cent. in the value of their deposits of about $300,000,000 in the aggregate."

The Shipping bill now before Congress, and of which nothing certain can be predicted, proposes to spend from $3,000,000 to $6,000,000 a year for from 10 to 20 years in an effort to open new markets and hold old ones fast escaping us, and to secure a fleet of steel ships built upon naval plans and subject to call for naval purposes. Not one dollar can be paid to shipowners except as it is actually earned. It is claimed that there is nothing partisan in this. Of American lines now in the foreign trade against severe opposition the Ward line to Cuba has not paid a dividend in four years, and the Brazilian line, it is said, could not be maintained but for the subsidy received from the Brazilian Government.

Captain John Ericsson made specific bequests of $125,000 in his will, but it now turns out that his estate does not exceed $90,000. For this reason the executors, George H. Robinson and C. S. Bushnell, began a suit in the Supreme Court for a judicial construction of the will. The question they present is whether or not any of the legacies have a preference. The action was tried before Judge Ingraham. Decision reserved.

Compressed Air

For the Transmission of Power in Paris.

The Popp system of distributing power from central stations to large cities, for the use of small and medium-sized industries, has taken a wonderful development in Paris, and has attracted considerable attention in this country. The earlier plant at Paris appears to have been very deficient, and through the intervention of Professer Reidler, the leading authority on the design of pumping and blowing engines, wonderful progress has been made. Professor Riedler has lately placed before the public the results of a very elaborate series of experiments carried on chiefly by Professor Gutermuth. These experiments, often made at a considerable sacrifice to the enterprise, have been embodied in a preliminary report placed before the Verein zur Beförderung des Gewerbfleisses at Berlin. The original central station at the Rue St. Fargeau, which was visited by the American Engineers during their stay in Paris, consisted of Paxman compressors, having a total horse power of 2000. To these were added subsequently five Cockerill compressors of the Dubois-François type of 2000 horse-power. There is now in course of construction a new central station, located on the Seine at the Quai de la Gare, planned for 24,000 horse-power, of which one-third will be in operation this spring. The first step taken by the German expert was to determine accurately the efficiency of the compressors in use at the old station. It was ascertained that the six Paxman compressors showed an efficiency of 7½ c. m. compressed to six atmospheres per horse-power per hour. The Cockerill compressors did better, having an efficiency of 8.5 c. m. Riedler modified the latter, making it practically a compound compressor, the first step being to compress to two atmospheres, delivering into an intermediate reservoir, where the air was cooled, and subsequently compressing in a second cylinder to six atmospheres. The result was that the efficiency was raised to 10.4 c. m. In detail the results are embodied in the following table:

Efficiency of Compressors.

Type of compressor.	Revolution.	Indicated horse-power.	Pressure. Atmosphere.	Efficiency. Per cent.	Air delivered. Per revolution. C. m.	Air delivered. Per hour. C. m.	Air delivered. Per horse-power per hour. C. m.
Paxman (600 mm. and 550 mm. diameter, 1219 mm. stroke, 23.6 and 21.7 x 48 inch).	37.	302	6	0.87	1.18	2620.	7.40
	37.	258	6	0.87	1.08	2378.	7.82
Cockerill (600 mm. diameter, 1200 mm. stroke, 23.6 x 46.25 inch).	40.	337	6	0.83	1.32	3168.	7.98
	45.	353	6	0.83	1.32	3564.	8.56
	40.	342	6	0.88	1.408	3379.2	8.40
	46.	377	6	0.85	1.36	3753.6	8.46
	38.6	324	6	0.89	1.423	3303.6	8.67
	38.5	337	6	0.89	1.422	3287.6	8.33
	38.6	329	6	0.91	1.445	3346.	8.64
Riedler, 1090 mm. low pressure, 670 high pressure, 1200 mm. stroke, 42.91 and 26.38 x 46.25 inch.	52.	615	6	0.985	2.196	6848.	10.020
	60.	709	6	0.98	2.180	7902.	10.026
	38.	422	6	0.985	2.195	5000.	10.656
	39.	424	6	0.985	2.195	5136.	10.890

The new central station at the Quai de la Gare is located on the Seine, so that coal can be cheaply delivered by water, and there is a full supply of water for spraying in the compressors and for the condensers of the engines. The engines are triple expansion, according to the latest designs, and are to be built by Schneider & Co. of Creusot, who guarantee 700 grams of fuel per hour per horse-power, with penalty of 20,000 francs for each 100 grams excess. The Paxman compressors worked with a consumption of steam of 9 kg. per hour, while the Cockerill engines required 8, and it is believed that the newly-designed engines will come down to 5.3 kg. The engines are vertical, because there is little space, and the compressors will be compound, the air being drawn from outdoors, compressed in the low pressure cylinder, delivered into an intermediate reservoir, where it is cooled, and finally brought up to normal pressure in the high-pressure cylinder.

Compressed Air as Motive Power.

The one important feature developed in practice with the Popp system in Paris is the heating of the compressed air before it is delivered to the engine acting as the motor. In this manner the disadvantages of the formation of ice are avoided, the air is expanded and its capacity for work increased. The heating ovens introduced by Popp are cast-iron stoves with cell walls and simple internal heating. They are simple and readily placed in position; but it is hardly claimed that this cast-iron stove should be considered an ideal heating apparatus. The following table gives the results of experiments made on the stoves, showing their efficiency, as measured by the amount of work utilized in heating the air:

Efficiency of Heating Stoves.

	Cast-iron stove.		Wrought-pipe stove.
Heating surface, square meters	1.3	1.3	4.3
Volume of air heated per hour, cubic meters	576	3.3	1,088
Temperature of air entering, deg. Cel.	7	7	50
Temperature of air delivered, deg. Cel.	107	184	175
Calories, per hour	17,900	17,200	39,200
Calories, per square meter, heating surface	13,760	13,230	9,100
Calories per kilogram coke	4,470	4,530	5,600

The consumption of fuel per hour is 0.09 kg. per effective horse-power of the air motor. This consumption of fuel is so small that even with large engines it does not play an important part. A more efficient apparatus for heating would make it possible to give the compressed air so much heat that all losses in compression are made good, and that even more power can be delivered than was originally applied to the compression of the air. A further development is possible by a heating apparatus so arranged as to pre-heat in one apparatus and carry the temperature higher in the second one. The influence of double heating of this kind is shown by the following results of an earlier trial in which two engines were coupled, one behind the other:

Coupled 4 and 6 Horse Motors with Double Heating.

Pressure, atmospheres	5.5	5.5
Horse-power developed	6.11	6.0
Temperatures air of motors:		
On entrance	110° C.	65°
Exhaust	150° C.	100°
Consumption of compressed air per hour per horse-power, cubic meters	20.4	18.3

The consumption of air per horse-power declined from 23 c. m. in the case of the single engine to 20.4 and 18.3 c. m. per hour, when pre-heating as moderately as stated. The engines in question were very deficient old steam engines.

The rapid development of this system made it impossible to choose the very best motors. Small rotary motors were experimented with, yielding the following results. Formerly they consumed 70 c. m. per hour per horse-power, which is equivalent to an efficiency of 15 per cent. The details of their work are shown in the following table:

Efficiency of 1 Horse-Power Compressed-Air Rotary Engines.

Revolutions.	Atmospheres. Pressure.	Horse-power.	Temperature. Admission.	Temperature. Exhaust.	Air per horse-power per hour without heating.
					C. m.
91	4.0	0.755	16°	−10°	84.2
117	4.0	0.93	16°	−10°	83.4
187	4.0	1.08	16°	−15°	55.1

When running at higher speed they actually consumed 30 to 40 per cent. less. Here the investigation confirmed the assumption that the pistons were not tight, so that the losses were less at a higher speed. The same is true of small crank motors. The following table gives the results of a number of tests of this class of engine, with 4 atmospheres air pressure indicating the results obtained and cut-off:

Efficiency of Small Rotary Engines.

Engine.	Revolutions.	Horse-power at brake.	Air temperature. Admission.	Air temperature. Exhaust.	Air consumption per horse-power per hour. Without heating.	Air consumption per horse-power per hour. With heating.
					C. m.	C. m.
Old rotary, no expansion:						
⅙ Horse-power	234	0.51	15°	−18°	66	.....
⅓ Horse-power	241	0.61	50°	.....	.....	47.3
½ Horse-power	187	1.08	15°	−15°	55.1	.....
1 Horse-power	230	1.42	60°	23°	.....	46.0
Rotary Cut-off:						
1 Horse-power.	221	1.24	16°	−36°	41.6	.....
1 Horse-power.	207	1.18	15°	−42°	36.4	.....
1 Horse-power.	210	1.20	70°	3°	.....	27.2
2 Horse-power.	200	2.30	20°	−48°	30	.....
2 Horse-power.	235	2.72	70°	.....	.....	24
2 Horse-power.	241	3.22	60°	−2°	.....	24

Without pre-heating, rotary motors with an automatic cut-off consumed 30 c. m. per hour per horse-power. When the air is pre-heated to 50° C., the consumption declined to 24 c. m. The following table gives the comparative re-

sults of running small crank engines when using the air as it comes from the pipe line and after pre heating it:

Efficiency of Small Crank Engines.

Engine.	Revolutions.	Horse-power at brake.	Air temperature.		Air consumption per horse-power per hour.	
			Admission.	Exhaust.	Without heating.	With heating.
					C. m.	C. m.
2 Horse-power Tangye... .	242	3.77	25°	−37°	33.6	....
2 Horse-power Tangye.....	239	3.56	150°	.....	.....	27 2
2 Horse-power Journaux..	169	2 10	10°	.....	34.1	.....
2 Horse-power Journaux. .	148	2.27	150°	0°	.....	19 7
1 Horse-power Journaux...	283	1.035	150°	34°	.....	24.2
1 Horse-power Boulet.....	149	4.1	165°	18°	.....	23.13

All of the engines experimented with above were old steam engines of poor workmanship. The friction was very great. Thus the 2 horse-power Journaux engine showed 67 to 75 per cent. With a better class of engine 90 to 92 per cent. efficiency has been proven. Even an old 80 horse-power single-cylinder Farcot steam engine used as an air engine developed an efficiency of 91 per cent. The following table gives the results of experiments with this engine, which had been working for six years as a steam engine, and was simply supplied with compressed air instead of steam, a heating oven being added, which was capable of carrying the temperature of the air to 170° C:

Efficiency of 80-Horse Farcot Engine.

Revolutions.	Indicated horse-power.	Air temperature.		Air consumption per hour per indicated horse-power.
		Admission.	Exhaust.	
				C. m.
54.3	72.3	120°	21°	14.45
54.3	72.3	152°	29°	13.45
54.0	72.3	160°	35°	13.16
40.0	65.0	170°	49°	13.50

Professor Riedler discusses in detail the advantages of the compressed air system, protests against any deductions unfavorable to it, like the Birmingham plant, and goes into a theoretical investigation of the loss due to transmission over long distances. In all the calculations of the professor with the engine experimented with, the assumption was made that the loss in pressure was equal to one atmosphere in the Paris system.

It was believed at first when designing the plant that reservoirs would be necessary to act as accumulators for the air. It was found, however, that the pipe lines themselves met all requirements in this respect, and no provision will be made in the new system, which is to have a line of 500 mm. pipe, the old system having 17 km. of 300 mm. pipe. Elaborate tests were made to arrive at accurate data concerning the leakage and the friction in the pipes. So far as the former is concerned, the results have been that it amounts to only 5¼ per cent. on the whole line of 17 km. Concerning the latter, one important consideration was brought up. Is was soon discovered that the main pipe line, which was provided with a number of water reservoirs, whose resistance was exceptionally large, showed that as soon as the rate of flow of the air exceeded 7 m., there was a loss of pressure due to one of these reservoirs of 0.15 atmospheres, which increased to 0.2 atmospheres when the velocity rose to 9 m. Yet the friction due to these reservoirs is not normal, since other arrangements for draining the pipe might be provided which would not have the drawback referred to. In all tests the resistance of the large drainage reservoirs and of the large number of smaller syphons is included. In the whole line of 16.5 km., which includes the southern pipe line, starting from the central station at the Rue St. Fargeau to the Madeleine and through the southern pipe line, is four large drainage reservoirs with great resistance, and 23 syphons. The friction due to these apparatus is included in the resistance of the pipe line in general. The tests were repeated frequently and included velocities up to 15 m. per second. The following table contains some of the results of the series made:

Friction in Compressed Air Pipe Line.

Line.	Length, meters.	Initial pressure, atm.	Pressure at end, atm.	Air per hour, cubic meters.	Velocity, meters.	Decrease in pressure, atmos. per kilometer.
Entire line... ..	16,502	6.25	4.25	2206 6	3.67	0.12
" "	16,502	6.78	4.36	21.0.0	8.24	0.14
" "	16,502	7.125	5 84	1485.0	5.83	0.07
" "	16,502	6.90	6.28	1030.0	4.10	0 03
" "	16,502	6.78	6.4	865.2	3.40	0.02
Usine II. Charonne..	4,403	6.90	6.6	1297.0	5.09	0.07
"	4,403	7.125	6.95	966.8	2.80	0.04
" ..	4,403	5.78	6.17	1859.0	7 30	0.14
" ..	4,403	7.125	6.70	1408.0	5.53	0.09
Fontaine Usine I	3,340	6 00	5 84	1610.0	6.32	0.048
Charonne Fontaine	8.759	6.65	6.39	1071.0	4.20	0.029
Fontaine Usine I	3,340	6.33	6.29	1102.0	4.32	0 012
Usine Charonne.	4,403	6.75	6.50	1126.0	4.42	0.056
" "	4,403	6.37	6.20	1248 6	4.90	0.038

The conclusion is that for a velocity of 6.5 m. the loss of pressure of one atmosphere, which was assumed in all the discussions of efficiency, would permit of a length of line of 20 km., so that at the end of so long a line any motor driven by compressed air would show the consumption of air and the efficiency alluded to before. With an average velocity of 6 m. it was shown that in the Paris pipe line the reduction in pressure was 0.07 atmospheres per kilometer. Prof. Riedler believes that with a properly designed line the area of distribution might be increased to 20 km. radius for a loss of pressure of one atmosphere, and adds that a more thorough design might further improve the results of the system.

At the annual meeting of the Metropolitan Iron and Land Company, held in Milwaukee on the 19th inst., Solomon S. Currie, Stephen Clement, O. W. Potter, H. S. Haselton and J. A. Whaling were elected directors. The officers elected were: President, Solomon S. Currie; treasurer, L. J. Petit; secretary, H. S. Haselton. The shipments for the year from the mines operated by this company aggregated 1,080,175 tons. They are the famous Norrie, East Norrie and Pabst mines in the Gogebic district. A dividend was not declared, but it is asserted that one will be made soon.

The cost of the "new navy" has been figured up by a member of the Appropriations Committee, and a statement prepared showing the cost of the new navy for hulls and machinery, and exclusive of armor and armanent, under acts of Congress passed up to the present time. Summarized, this statement is as follows: For five vessels (monitors), $9,859,208; four vessels under act of March 3, 1883, $3,987,996; four vessels under act of March 3, 1885, $3,452,215; five vessels under act of August 31, 1886, $6,410,471; five vessels under act of March 3, 1887, $6,254,006; eight vessels under act of 1888, $9,670,507; five vessels under act of March 2, 1889, two of which will cost $1,642,771; six vessels under act of June 30, 1890, $13,706,821; total cost of hull and machinery, exclusive of armor and armament, $53,973,695.

Decisions on Customs Duties.

The Board of United States General Appraisers have announced the following decisions relating to customs duties on iron and steel and manufactures: On an invoice of iron shafting duty was assessed at 45 per cent. The appellants claimed that the rate should be $\frac{3}{10}$ cent. per pound for scrap iron. The act provides "that nothing shall be deemed scrap iron or scrap steel except waste or refuse iron or steel that has been in actual use and is fit only to be remanufactured." The merchandise in question consists of four pieces of shafting, weighing in the aggregate over 6 tons. The fact that this shafting is fit and is intended for other use than to be remanufactured is indicated by the invoice price, which is £6 per ton. In Glasgow, from whence this shafting is imported, the market value of old or scrap iron is about £2. 10/ per ton, while that of new steel rails is about £5. The value given in the invoice sustains the report of the assistant appraiser that the shafting can be used otherwise than in remanufacture.

In a case of forged tools the merchandise was classified as "manufactures of steel," and duty was assessed at 45 per cent. The appellants claim that the goods should be rated at 2½ cents a pound for "forgings of iron and steel," or at 35 per cent. for "cutlery."

The articles in question are gun springs, locks, hammers, and taps, chisels, gouges, planes, wood carving tools, &c. They have been advanced beyond the condition of forgings, being tempered, polished and completed implements. They are not commercially known as "forgings" or as "cutlery," and were correctly classified as "manufactures of steel."

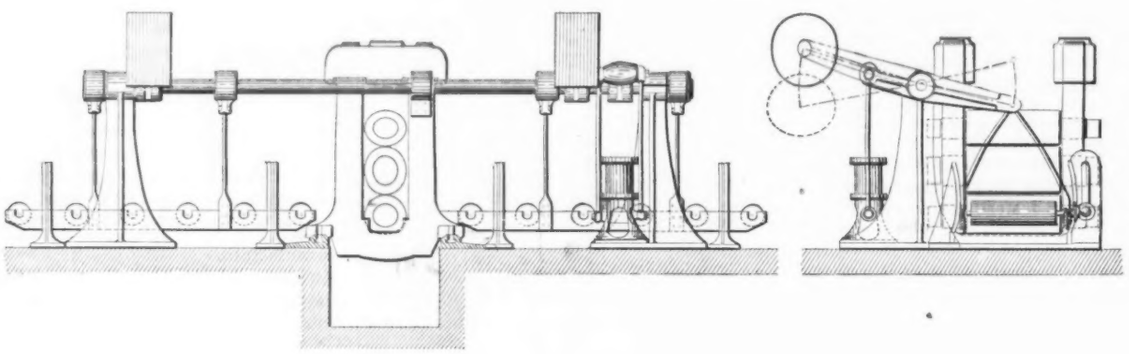
In a case of steel wire duty was assesssed at 45 per cent., under the fifth proviso of paragraph 148 of the new tariff act of October 1, 1890. The appellants claim the specific rates according to gauge, named in the same paragraph. The merchandise consists of steel wire, ranging from No. 9 to No. 19 wire gauge, all valued in the invoice at more than 4 cents a pound. The fifth proviso states "that all iron or steel wire valued at more than 4 cents per pound shall pay a duty of not less than 45 per cent. ad valorem." The importers contend that this proviso refers only to "iron or steel wire coated with zinc or tin," the subject matter immediately preceding; but this interpretation cannot be sustained, as the language of the act is "all wire." It is conceded by the importers, and the invoice shows, that duty according to the specific rates named would fall below 45 per cent. ad valorem. Assessment of duty under the fifth and last proviso of the paragraph is therefore correct.

The Chicago, Rock Island and Pacific Railway Company have issued a copy of the Western Freight Classification revised to January 1. It is in miniature form and will be found very convenient for use by shippers. It can be had on application at any of the offices of the company.

Rolling Mill Feed Table.

This table was designed to be raised and lowered from above in order to overcome the disadvantages of the common method of operating tables from below. This must be done without in any way interfering with the operation of the crane, and therefore the machinery for accomplishing this object must not rise above the top of the housing. In the method designed by J. R. George of Chicago the crane is free to work on the main rolls, or to remove rollers from the tables, as well as handle the operating machinery of the tables, which, when in a pit, is out of reach of the crane. The advantage of having machinery where it can be seen and where it is readily accessible for repairs is nowhere more apparent than in rolling-mill practice. The placing of machinery in a dark pit where wearing surfaces are constantly exposed to scale, where there is limited room about it, and where all heavy pieces must be handled without the aid of a crane, is a practice which is expensive in delays and repairs. It is stated that this overhead method would cause a large saving in the power necessary to raise tables, the inertia of moving parts and friction of bearings bring less than it is possible to get in any pit system. All bearings are where they can be easily kept in line and lubricated. This saving is no small item where heavy tables are raised from 24 inches to 35 inches about 200 times an hour. Another point is that it leaves a solid foundation on which to place guides and tumblers. The first cost of such a plant is much less than where a large pit must be excavated, walled and drained.

The construction here followed will be readily understood from the two drawings presented. Each table is suspended from one end of working beams which carry counterbalance weights on their opposite ends. These beams are oscillated to effect the raising and lowering of the tables by means of a steam cylinder, connected as shown. It will be observed that all parts are out of the way of the crane and within easy access for inspection or repairs.



SUSPENDED FEED TABLE FOR ROLLING MILLS.

An inquiry into violations of the Interstate Commerce law has been begun by the Federal Grand Jury at St. Paul, instigated by the Interstate Commission, as were also the indictments at Chicago. It is said that the commission has completed a chain of cases, including evidence against railroad officials in Omaha, Kansas City, St. Louis, Cincinnati and New York, and that they will all be called before their respective grand juries.

The annual meeting of the Superior, Palms, Aurora and Comet Mining Companies, which are controlled by the Wisconsin Central Railway Company, were held at the Colby & Abbot building, Milwaukee, on the 20th inst. The following board of directors were elected for the Superior Mining Company: Charles L. Colby, New York; Edwin H. Abbot, Boston; Colgate Hoyt, New York; J. L. Colby, Cleveland; Charles H. Ropes, New York; L. H. Severence, Cleveland; Gardner Colby, New York. The directors for the Palms Company are the same as those of the Superior, except that A. L. Dickerman is a member instead of Mr. Severence.

The Westinghouse Interests.

George Westinghouse, president of a number of companies at Pittsburgh bearing his name, was recently interviewed in New York City. He gave the following information relating to the various interests with which he is connected:

"There are eight distinct corporations conducting business in Pittsburgh that are spoken of as Westinghouse concerns, but there is no connection between these companies except the fact that I have a large interest in the stock of each and the fact that I am president of seven of the companies. These companies are the following:

"1. The Westinghouse Air Brake Company have a capital of $5,000,000. This company have no debts of any character, have large available assets, and besides paying dividends, have recently expended a large sum out of their earnings for the erection of their new works at Wilmerding. Their net earnings for the past two years have been at the rate of 25 per cent. per annum on their capital. The company also own a controlling interest in the Westinghouse Product Company, Limited, of London, England, who conduct a large and profitable business throughout Europe and the British colonies, and have accumulated a surplus of $1,500,000, besides paying a regular 6 per cent. dividend.

"2. The Union Switch and Signal Company. Their capital is $1,500,000, of which $500,000 is preferred. They pay dividends on their preferred stock and are using the balance of their earnings in their business.

"3. The Westinghouse Machine Company. Their capital is $500,000 and their net earnings, which exceed 20 per cent. per annum, are being used to extend the business, which is in a most flourishing condition.

"4. The Philadelphia Company. Their capital is $7,500,000. They have paid dividends for over five years at the rate of 12 per cent. for the first four years and afterward at 8 per cent. until the present quarter. Two million dollars has been taken from the earnings to build up new pipe lines and charged to operating expenses. Their system of pipe lines has carried as high as 400,000,000 cubic feet of gas per day, and is, judged by the value placed on gas plants in other towns, worth fully the amount of the company's capital. Their net earnings for the quarter ending December 3 last were $300,000, after charging to operating expenses $90,000 expended in new construction. This company, by using all of their earnings for a short period, can entirely free themselves from debt.

"5. The Standard Underground Cable Company have a capital of $1,000,000. Their net earnings for 1890 were over 25 per cent. upon their capital, and their condition is excellent.

"6. The Allegheny County Light Company. They have a profitable business, and their net earnings for the past year have been about 8 per cent. on an authorized capital of $1,000,000, of which only one half has been placed.

"7. The Fuel, Gas and Mfg. Company have a capital of $1,000,000, and have no debts, and have earned about 12 per cent. on their capital during the first year.

"8. The Westinghouse Electric and Mfg. Company have an authorized capital of $10,000,000, of which $7,000,000 is common and $3,000,000 preferred. None of the preferred stock has yet been issued. Their book assets are over $10,000,000, and their liabilities about $3,300,000, excluding capital stock. By the elimination of doubtful values and the book value of the patents the assets amount to about $6,500,000. Of the liabilities about $1,200,000 is deferred for considerable periods, and $1,300,000 is secured by collaterals, which, under normal conditions are of greater value than the debt secured. The accounts collectible and material in stock, manufactured and in process of manufacture, aggregate $1,600,000, excluding the amounts due from the leased companies for cash advanced for working capital. Keen competition and the methods of the electric manufacturing companies in general have in the past forced conditions of payments which have made the collection of accounts slow and difficult. Notwithstanding their present embarrassment this company have been doing a profitable business, their sales during the year 1890, including the business of the leased companies, having aggregated $4,700,000. The orders on hand for electric lighting and street railway appliances are sufficient, with those being received daily, to require the full capacity of the companies' factories. The company are now in a position to supplant their extensive selling agencies, which have heretofore been necessary to quickly establish a large trade, for a system much more in accord with the practice of large and well-established manufacturing concerns, so that, under these conditions, there should be a net profit of from

20 to 25 per cent. upon the company's business of about $6,000,000.

"Of all the companies in the list only the electric company are in financial trouble. All the capital they require can be secured by the placing of 30,000 or 40,000 shares to the par value of $50 of their preferred stock, either for cash or in settlement of outstanding obligations. I am now devoting myself to the placing of this stock and am very hopeful of success. The total sales of all the companies named amounted in 1890 to over $15,000,000."

The prospects of the Westinghouse Electric and Mfg. Company of Pittsburgh being relieved from their financial difficulties are more encouraging than for some time past. The efforts of Mr. Westinghouse to dispose of the preferred stock of the company are reported to have been very successful, and it is believed that his efforts to dispose of 40,000 shares of this stock at the rate of $50 per share will be accomplished. The Pittsburgh creditors have pledged themselves to take a large number of these in payment of their claims against the concern. It is also reported on good authority that a syndicate of Pittsburgh business men have agreed to subscribe for 10,000 shares of this stock, the sale of which will realize $500,000 toward paying off the debts of the company. In case the effort to dispose of 40,000 shares of the preferred stock is successful it will be the means of placing $200,000 in the hands of the company with which to pay off their pressing liabilities. It is claimed that this sum will put the company on their feet, and put their business in a paying condition. At a meeting of the Board of Directors held in Pittsburgh on Thursday, the 22d inst., the following circular was prepared and sent to the stockholders:

OFFICE OF
WESTINGHOUSE ELECTRIC AND MFG. CO.,
PITTSBURGH, PA., January 22, 1891.

To the Stockholders of the Westinghouse Electric and Mfg. Company:

Since the issuance of the circular dated January 6, subscriptions to the preferred stock have been made to the extent of 20,500 shares, and assurance given for a further amount that brings the total to above 25,000 shares.

The condition of some of the subscriptions is that at least 40,000 shares be taken in all, and it is now intended to make all subscriptions subject to this condition, and to extend the time for subscription to January 31, 1891.

The placing of this 40,000 shares will entirely relieve the company of their financial difficulties and place them in a position to push their business.

Those who have already contributed so largely to the protection of the interests of the stockholders have done so with the expectation that the others will promptly do their share.

You can feel assured that the conditions upon which your subscription is asked make it entirely free from risk.

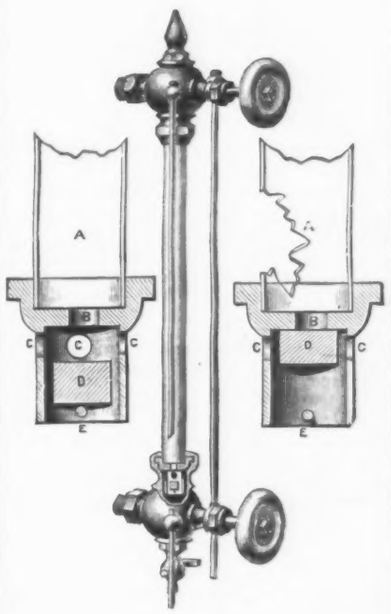
By order of the board,
GEORGE WESTINGHOUSE, JR.,
President.

Negotiations are now pending which may secure to the Cramps of Philadelphia the plant of the Standard Steel Casting Company at Thurlow. President Robert Wetherill admitted to-day that the Cramps wanted the works for heavy castings. The Standard have paid 33 per cent. dividends, and the stock, par $100, has sold for $203.

Bradstreet's analysis of the commercial failures in this country and Canada in 1890 shows that of 12,229 failures, 89.7 per cent. had a capital of less than $5000, and 96.7 per cent. had a capital of less than $20,000. Of the total failures 91 per cent. had $20,000 liabilities or less. There were 8 per cent. less failures in 1890 than in 1889, and just about as many as in 1888. Of the 1,063,000 names rated, representing 72,637 towns, the percentage of failures was 1.15 per cent., against 1.27 per cent. in 1889. The number of failures where the rating was "moderate, fair, or no credit" was 91.9 per cent. of the whole number, against 92 per cent. in the previous year. The proportion of failures of concerns which had been rated in good credit decreased from 6.6 per cent. in 1889 to 6.3 per cent. in 1890. The proportion of firms which failed after having been reported in very good credit increased from 1.2 per cent. in 1889 to 1.6 per cent. in 1890.

Automatic Water-Gauge Valve.

Jenkins Brothers, 71 John street, New York, manufacture Dunton's Automatic Water-Gauge Valve, views of which are shown in the accompanying cut. The view on the left of the water gauge represents the valve resting on the bar at the bottom, allowing free passage of the water. If the glass breaks accidentally the valve seats itself and prevents any water from leaving the boiler. The position of the valve



Automatic Water-Gauge Valve.

when the glass breaks is shown in the view at the right. Referring to the illustration, A is the gauge; B, water passage on top of valve; C C, water passages on side of valve; D, valve, and E, bar holding valve in place. The water passages, it is said, allow perfect circulation, and the valve acting automatically when the gauge glass breaks prevents scalding water from escaping and burning the attendant; and, furthermore, should the accident happen in the absence of the engineer, it guards against the loss of water and the burning of the boiler. This valve can be atached to any water gauge, at any time, by simply removing the glass and dropping the valve into position.

The pig-iron manufacturers of the Shenango Valley, Pa., have joined the organization known as the Mahoning Valley Iron Manufacturers' Association, and the association will be known in the future as the Mahoning and Shenango Valley Iron Manufacturers' Association. When fully organized it will include every pig-iron manufacturer in the two valleys, with the single exception of Brown, Bonnell & Co., whose plant is operated by a receiver. It is believed that this association will be of considerable benefit to those composing it. There are no new developments in regard to the shut-down of the furnaces in the Mahoning and Shenango valleys. From present indications operations will not be resumed for some weeks to come.

The World's Fair.

According to resolution of the Board of Directors of the World's Fair at Chicago, the work of construction began on the 27th inst. with the erection of a temporary structure in the Lake Front Park for the use of the Construction Bureau. This may be regarded as the formal beginning of the Columbian Exposition enterprise. It is understood that active work will follow. Several buildings are designed for erection in the Lake Front Park, which will be devoted mainly to art, but the principal structures will be located in Jackson Park. The areas to be roofed in at the latter point are estimated as follows by Chief of Construction Burnham:

Department:	Main structures. Acres.	Additional area. Acres.	Total. Acres.
A. Agriculture	9½	10	19½
B. Horticulture	8½	....	8½
D. Fisheries	3	....	3
E. Mines	6	....	6
F. Machinery	11¾	7	18¾
G. Transportation	7	10¾	17¾
H. Manufactures. L. Liberal Arts. Ethnology, &c.	22½	9	31½
J. Electricity	6	....	6
Totals	74	36¾	110¾

These areas are stated to be the actual ground surfaces under roof, and do not include the additional room to be secured by galleries. It will be seen from these details that the Columbian Exposition is projected on an ambitious scale. The largest building at the Paris Exposition in 1889 covered but 11 acres, and the largest at Philadelphia in 1876 covered about 20 acres.

One of the greatest undertakings of 1891 will be the extension of the Great Northern Railway from the North central part of Montana to Puget Sound, a distance of 500 miles across the Rockies, through the famous Flathead Lake country, across the Pan Handle of Idaho, into the Koolenai country, and through the entire length of the State of Washington to tidewater. When completed it will be the shortest line by 250 miles of any transcontinental route and will open up a large area of undeveloped mineral, timber and agricultural country. The Great Northern Railway has recently opened to traffic 162 miles of the new short line extension to the Pacific Coast. Supplies are being concentrated for vigorous work through the lowest pass in the Rocky Mountains, which when crossed into the Flathead Lake country will give the Great Northern two lines over the Continental range, the other crossing being on the Butte route.

In the proposed new suspension bridge across the Potomac at Washington the clear hight above the water at mid-channel is to be 105 feet, the river span to be 1100 feet and the two shore spans 652 feet each. The approaches at each end will be on masonry, arched, viaducts and embankments of earth. Suspension cables of steel will pass over two granite towers, each about 210 feet high, pierced with arched openings for roadways, and be anchored into masses of masonry at the outer end of each approach.

The traffic managers of the roads in the Western Traffic Association have thus far failed in the task of establishing the territorial divisions of that association.

The Great Pig Iron Product.

Details of the Production in 1890.

James M. Swank, secretary of the American Iron and Steel Association, has just published his report of the production of pig iron in the United States in 1890, which places us far ahead of all iron making countries. The output was as follows by States:

Production of Pig Iron in 1887, 1888, 1889 and 1890.

States.	Tons of 2000 pounds.			
	1887.	1888.	1889.	1890.
Maine	4,397	5,574	5,200	1,200
Massachusetts	11,114	13,248	7,751	5,531
Connecticut	21,741	21,644	24,143	22,552
New York	296,572	257,180	297,247	369,381
New Jersey	172,554	101,822	125,693	177,788
Pennsylvania	3,684,618	3,589,186	4,181,242	4,945,169
Maryland	37,427	17,606	33,847	165,559
Virginia	175,715	197,396	251,356	327,912
North Car'lina	3,640	2,400	2,898	3,181
Georgia	40,947	39,397	27,559	32,687
Alabama	292,762	449,492	751,425	914,940
Texas	4,383	6,587	4,544	10,895
West Virginia	82,311	95,259	117,900	144,970
Kentucky	41,907	58,790	42,518	53,604
Tennessee	250,344	267,93[illegible]	294,655	299,741
Ohio	975,539	1,103,818	1,215,572	1,389 170
Indiana	13,211	15,260	9,839	16,308
Illinois	565,453	579,307	601,035	785,239
Michigan	213,543	213 251	214,356	258,461
Wisconsin	133,508	116,087	158,634	246,237
Missouri	138,043	91,783	86,190	100,550
Colorado	25,291	20,877	2,678	23,588
Oregon	.....	2,509	9,426	12,305
Washington	1,586	4,094	10,671	.....
Totals	7,187,206	7,268,507	8,516,079	10,307,028

The report of stocks is as follows:

Total Stocks of Unsold Pig Iron.

States.	Tons of 2000 pounds.			
	June 30, 1889.	Dec. 31, 1889.	June 30, 1890	Dec. 31, 1890.
New England	19,347	19,897	15,344	11,572
New York	58,199	42,607	38,323	64,381
New Jersey	27,552	5,800	500	25.068
Pennsylvania	105,931	67,005	135,303	204,535
Maryland	2,218	1,372	1,880	1,037
Virginia, North Carolina, Georgia and Texas.	30,662	8,130	19,149	28,907
Alabama	36,449	39,916	58 717	69,957
West Virginia	3,217	.....	1,680	11,414
Kentucky	8,050	5,382	8,176	9,413
Tennessee	17,565	7,982	11,089	28,142
Ohio	70,909	27,579	46,192	116,608
Michigan and Indiana	37,257	25,102	18,339	56,452
Illinois	.....	.....	.....	19,504
Wisconsin	17,365	9,428	14,424	
Missouri and Colorado	33,438	8,981	13,124	29,434
Pacific States	5,157	8,220	7,304	5,168
Totals	563,289	277,401	389,244	681,992

Stocks According to Fuel Used.

Bituminous	247,564	86,772	196,595	341,303
Anthracite	165,334	77,502	83,160	164,301
Charcoal	150,388	113,127	109,489	176,388
Totals	563,286	277,401	389,244	681,992

In addition to the above stocks of unsold pig iron the American Pig Iron Storage Warrant Company held in their yards on December 31, 1890, 64,200 gross tons, of which 11,263 tons is included in the above tables as being still controlled by the makers, leaving 52,937 gross tons, or 59,289 net tons, of pig iron on the market in other hands.

The following are the most interesting details bearing on the production:

Production in 1890 According to Fuel Used.

Fuel used.	Production. Tons of 2000 pounds. (Includes spiegeleisen)		
	First half of 1890.	Second half of 1890.	Total for 1890.
Anthracite	1,227,195	1,221,586	2,448,781
Charcoal	314,427	389,095	703,522
Bituminous	3,566,153	3,588,572	7,154,725
Total	5,107,775	5,199,253	10,307,028

Production in Certain Districts in 1890.

		First half of 1890.	Second half of 1890.	Total for 1890.
Pennsylvania.	Lehigh Valley	410,578	405,310	815,888
	Schu'l Valley	293,780	312,146	605,926
	U. Sus. Valley	109,237	97,965	207,202
	L. Sus. Valley	292,041	275,199	567,240
	Juniata Valley	115,222	95,711	210 933
	Shen. Valley	325,869	343,979	669,608
	Alle'y Co	741,906	755,880	1,497,786
	Mis. bit	199,976	152,332	352,308
	Charcoal	7,458	10,820	18,278
Ohio.	H. R. bit	47,077	51,184	98,261
	Mah. Valley	282,827	272,422	555,249
	Hock. Valley	50,203	39,972	90,175
	Mis. bit	293,444	325,844	619,288
	H. R. char	9,130	17,067	26,197

Production of Bessemer Pig Iron in 1890.

	First half of 1890.	Second half of 1890.	Total for 1890.
New York	119,007	80,117	199.124
New Jersey	31,421	41,055	72,476
Pennsylvania	1,303.734	1,334,130	2,637,864
Maryland	63,276	81,009	144,285
North Carolina	577	1,780	2,357
West Virginia	57,433	80,875	138 308
Ohio	270,914	280,193	551,107
Illinois	318,795	385,532	704,327
Michigan	.....	1,285	1,285
Missouri	39,551	29,903	69,454
Wisconsin	27,892	13,572	41,464
Colorado	8,945	12,428	21,373
Total	2,241,545	2,341,879	4,583,424

Production of Bessemer Pig Iron in Pennsylvania and Ohio Districts in 1890.

	First half of 1890.	Second half of 1890.	Total for 1890
Pennsylvania.			
Lehigh Valley	152,167	144,257	296,424
Schuylkill Valley	82,313	73,671	155,984
Upper Susquehan.	65,212	66,240	131,452
Lower Susquehan.	199,382	198,176	397.558
Juniata Valley	14,210	10,089	24,299
Shenango Valley	148,818	177,440	326,258
Allegheny County	514,659	558,245	1,072.904
Miscel. bituminous	126,973	106,012	232,985
Ohio.			
Mahoning Valley	50,850	46,652	97,502
Hocking Valley	19.153	14,273	33,426
Miscel. bituminous	200,911	219,268	420,179

The quantity of pig iron made with anthracite coal alone in the first half of 1890 was 143,684 net tons; in the second half, 135,500 tons; total in 1890, 279,184 tons. In 1889, 344,358 tons. The quantity of spiegeleisen and ferromanganese made in the first half of 1890 was 97,907 net tons; in the second half, 51,255 tons; total, 149,162 tons. In 1889, 85,823 tons

New York State finances are in a healthful condition. The net State debt is now only $1,677,000, it having decreased $500,000 during the last year. The receipts in 1890 from all sources were $18,-212,000. For the current year the State tax is $8,619,748.17, the rate being 2.34. The total assessed valuation in 1890 was $3,683,653,062. Increase in one year, $116,000,000.

THE WEEK.

All the principal firms of window glass manufacturers would not come in, and so the proposed trust was abandoned. The secretary says they resisted all the inducements offered and resisted innumerable concessions.

The Senate Interstate Commerce Committee practically agreed to report favorably to the Senate an amendment to the anti-pooling section of the Interstate Commerce act so as to permit limited pooling of traffic. The amendment provides that common carriers may enter into contracts or agreements to apportion among them the carriage of freight and passengers. The contracts when filed with the Interstate Commerce Commission shall be binding, and any party to any agreement who fails, refuses or neglects to abide by its terms shall be punished by a fine of $5000 or two years' imprisonment in the penitentiary, or both, in the discretion of the United States courts, on whom jurisdiction is conferred. The committee also agreed upon an amendment recommended by the Interstate Commerce Commission in its last annual report. It provides that every common carrier, at the request of any common carrier, shall afford facilities for through traffic at through rates of fares.

The returns of British shipbuilding show that the vessels launched last year from the shipyards of the United Kingdom represented an aggregate of 1,302,-055 gross tons, and that during the two years 1889-90 no less than 2,647,570 gross tons of new shipping have been added to the world's fleets by British builders alone. The signs of overproduction are unmistakable, there being not only an absence of new orders, but ships are constantly withdrawn from service for lack of employment. Low freights are still complained of.

The New Brazilian minister to the United States, Salvador de Mendonca, says the republic was never more prosperous. Activity and business enterprise are noticeable in the seaboard cities, and the interior is filling up with immigrants, attracted by a free passage and grants of land, mostly in the coffee region. Foreign capital is being invested in manufactures. Thirty-two large cotton factories have been established. Only 800 miles of railroad are lacking in the entire coastwise line from Para in the North to Rio Grande do Sul in the South.

Hemp culture in the Bahama Islands promises an important development. Over 40,000 acres are being put under culture, investors being encouraged by the Government. About 1895 the results of the planting of Bahama hemp on a large scale will be definitely known. Meanwhile Sir Ambrose Shea has resolved to limit the area under cultivation to 150,000 acres, from which he expects an annual yield of 75,-000 tons of fiber. This can be delivered in New York at a total cost of $65 a ton for production and shipment; and at London at a cost of $70.

The Dominion Government organ in Montreal discredits the story that the United States has made overtures for closer commercial relations with Canada, but it "is certain that an overture will be cordially received and gladly accepted by the Dominion Government whenever it comes."

A letter from Cienfuegos, Cuba, dated January 12, says: "The Spanish Government is now reported to be considering the expediency of imposing a direct export tax on sugar after the 1st of April, when the average duty of 2 cents per pound will be removed in the United States. What is now under contemplation

is the replacing of the import duty taken off in the United States by an export duty in Cuba." Beet sugar, which has enormously cheapened cane sugar in the markets of the world, has been the chief economic cause of the decline in the prosperity of the island. If the proposed measure is carried into execution the writer quoted above predicts that Brazil under the new treaty will see her opportunity and that in the end Cuba will be ruined.

The annual estimates of the Agricultural Department show that the beef supply in the United States very nearly corresponds with the increase of population. The total cattle is 49,417,000 head for 1889, or 758 head per 1000 of population, which is barely up to the average of former years.

The Minneapolis Builders' Exchange, in an address to the Board of Education, urge that, inasmuch as the present manual training school is insufficient to receive all applicants from American mechanics for admission, a larger building should be provided.

The United States Senate passed a bill appropriating $2,000,000 for the improvement of Columbia River.

The Standard Oil Company is now supreme in the Ohio field.

The large manufacturing towns in Connecticut of Danbury, Waterbury, and Ansonia were deluged with water, and at Birmingham and Derby factories were closed by the destruction of the great dam, which cost $1,000,000 to build.

The Aqueduct Commissioners decided to build a great Croton dam at Cornell's, a site nearly 3 miles below the old dam, 1¼ miles above the proposed Quaker Bridge site. The dam will cost about $5,000,000, and about six years will be needed to complete it.

It is undoubtedly true, as reported by a contemporary, that a large body of the debtor class wish to see gold at a premium as in the days of the war, when a debt could be paid off in produce or on the receipts for its sale at 50 to 60 cents on the dollar. There is also a large class of needy adventurers now at the bottom of fortune's wheel who would welcome any upheaval of the financial order, on the ground that whichever way it turned they must be benefited by the change. The most of these are aggressive and vociferous, and seem to make up the great mass of the people.

Minneapolis, the great milling center, shipped last year 6,500,000 barrels of flour, which compares well with the best results previously recorded.

Brazil has a new ministry, and Chili, according to present indications, will soon have a new president.

Several State legislatures have voted to withhold subscriptions for the World's Fair pending the discussion of the Force bill in Congress.

The plan adopted for the improvement of terminal facilities of the East River Bridge includes the purchase of a triangular block north of the bridge on which switches, tracks and machinery can be placed. The entire cost is estimated at $1,377,000.

The proposition to establish a manual-training school in Boston is likely soon to assume a definite shape.

President Post of the Dock Commissioners, in his examination before the Fassett Committee, said that if the improvements contemplated were carried out in their entirety New York would have to buy 85¼ piers. That would cost $20,000,000, and the cost of the necessary bulkhead water fronts would amount to at least another $100,000,000. The new plan would not give any more piers for commerce. All the water front was occupied now, but the improvements would increase the storage room on existing docks from 20 to 25 per cent.

The representatives of labor organizations in session in Washington, D. C., formed a permanent organization to be known as the Confederation of Industrial Organizations. Benjamin Terrell of Texas was elected president. The new organization demands the abolition of national banks as banks of issue; a free and unlimited coinage of silver; the passage of laws prohibiting alien ownership of land; that the revenue shall be limited to the necessary expenses of the Government; a graduated tax on incomes; the election of United States Senators by the direct vote of the people of each State, and the President and Vice-President by a popular vote. Master Workman Powderly and leaders in the Farmers' Alliance were among the most active promoters.

The Emperor of Germany, at a recent official dinner given by his Minister of Finance, distinguished the occasion by his free utterances on bimetallism. He declared that Germany "could not accept" the double standard, that the question had been "definitely settled" in favor of the single gold standard, and that the commercial countries would soon "agree upon" the universal adoption of the exclusive gold basis. As the foregoing declarations are in effect a decisive response to the proposition for an international conference on the coinage question, and as British financiers are known to entertain similar views, it is worth while for the silver advocates at Washington to consider the expediency of attempting to maintain single-handed a system of bimetallism which is repudiated by the leading commercial nations of Europe.

The silver coinage discussion is causing a temporary stagnation in real estate transactions in New York City. Some of the loaning institutions, so a reporter says, have lately inserted in their mortgages a provision that these mortgages shall be payable in gold. It has been the custom of one or two institutions to insert such a provision for some years. No special attention was given to the clause, however, until lately, when other institutions and private lenders saw fit to employ this phrase. Thereupon borrowers of money have taken fright, and the immediate result has been to check speculative interest in real estate for the present.

Astor's contemplated hotel on Fifth Avenue and Fifty-ninth street, as shown by the plans of the architect, W. H. Hume, will be 17 stories high, including four in the mansard roof, the whole absolutely fire proof, constructed about a stiff framework of steel.

The morocco manufacturers of the Eastren States propose the establishment of a technical school in connection with the University of Pennsylvania, in which attention will be directed exclusively to the chemistry of tanning. Professor Barker, who occupies the chair of physics at the University, is confident that, if the new departure is successful, other trades will follow the example.

The new sea post office service on the German steamship lines will probably go into operation April 1. Five or six hours, the officials think, will be saved by distributing the mails on shipboard.

The citizens of Elizabeth, N. J., are making a strong effort to have the entire plant of the Progress Iron Works of New York transferred to that point.

The Manufacturers' Club of Philadelphia are taking an active interest in the improvement of shipping facilities at that port. They propose a commission, which shall rearrange the pier lines, as was done by the cities of Antwerp, Liverpool, New York and Montreal, and it is contemplated that docks shall be built capable of accommodating the largest ocean steamships.

The widest plank on earth is on exhibition in Humboldt, Cal. It is 16 feet in width, and will be among the Humboldt exhibits at the World's Fair.

Many bills regulating railroads in Michigan have been introduced in the Legislature at Lansing, indicating the hostile attitude of the farmers.

Philadelphia imports more, but exports less, than it did ten years ago. Cargoes find a starting point at other ports.

It is officially decided that the sugar bounty under the new tariff begins July 1.

Walking delegates sometimes fare badly in Germany. A cabinet maker in Berlin, who was recently sent as a delegate from a number of fellow-workmen to warn their employers that they would go out on strike unless their wages were increased, was promptly arrested at the instance of one of the employers upon whom he called. The man was afterward tried on a charge of trying to extort money by threats, and was sentenced to imprisonment forsix months.

Through the efforts of the State Commissioner of Immigration in New Hampshire, 350 abandoned farms were repopulated during the past year, mainly by Americans.

Sea-going ships may soon steam up and down the great lakes, in a direct trade with Europe, now that the Canadian canals have been deepened to accommodate vessels drawing 9 feet. The proposition is to organize a company and build ten steamers, costing from $125,000 to $150,000 each, for a weekly line.

That there will be no free-coinage law passed at this session of Congress is the conviction of a well informed correspondent at Washington. The feeling is growing that the House will never consider the bill which recently passed the Senate. The clamor for more money has subsided, credit is reviving and Eastern sentiment seems at last to be rousing from its lethargy and making itself felt. Besides, the exposure of the silver pool among Senators had a deadening effect.

Chicago is overrun with idle workmen, attracted thither by the vain hope of obtaining employment on the World's Fair buildings, for which no sod has yet been turned. Their number has been estimated at 5000.

The work of sinking the tunnel shaft at Niagara Falls is proceeding with dispatch.

Engineers at Chicago estimate that an expenditure of $6,340,000 will be necessary to provide facilities for transportation to and from the fair grounds at Jackson Park, 8 miles distant. The items include an eight-track loup, an overhead crossing and 138 locomotives.

The Central Traffic Association, at Chicago, adopted a resolution providing that the rate of $4.25 a gross ton on iron water pipe from Cincinnati to Duluth and West Superior by way of Mackinaw should not in any event be extended beyond June 30, 1891. At the meeting of the Western and Northwestern divisions of the Western Freight Association, a rate of $2.50 a ton on cast-iron water pipe from Chicago to St. Paul and Duluth and Wisconsin iron towns was agreed upon, to take effect January 1.

The city of Providence asks authority from the Legislature to expend $500,000 for water works.

The Iron Age

New York, Thursday, January 29, 1891.

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RICHARD R. WILLIAMS - - HARDWARE EDITOR.
JOHN S. KING, - - - - BUSINESS MANAGER.

The American and Foreign Iron Trades.

It may be doubted whether many people realize that the United States is the only country making rapid progress in the development of its iron and steel industries. All are familiar with the bare fact that the production of iron and steel in our own country has been pushing ahead at an enormous rate within the past decade. But the impression seems to be quite common that Americans are simply keeping up with the rest of the world. The converse of this statement will correctly represent the situation. The rest of the world is not keeping up with the United States. It is almost ten years since Great Britain made its maximum output of pig iron. At no time since then has the condition of British trade warranted the putting forth of extra efforts to meet the demand. At that time, in fact, a stock of unsold pig iron was accumulated which has been an incubus on the British pig-iron industry ever since. Last year, when we were increasing our production so enormously, the blast furnaces of Great Britain actually made less than they did the previous year. It is true that the reduced production may be attributed to the strike among Scotch blast furnacemen, but there would have been a speedy settlement of the strike if the condition of trade had made it desirable to operate the furnaces. But even in its year of greatest production Great Britain did not turn out as much pig iron as the United States did last year.

Germany is the only country besides our own which is actually making progress in the production of pig iron, but its progress is quite slow as compared with ours. It will be remarkable if the statistics of the year's production show an output even half as large as that of this country. It is a most extraordinary jump for Germany to take when it gains 500,000 tons a year, while the United States often increases its annual production 1,000,000 tons, and has been known to advance 1,500,000 in a single year All other countries are insignificant producers of pig iron as compared with the United States, Great Britain and Germany. France appears to be going backward in this industry instead of forward. Belgium makes quite a stir in the world with its cheap manufactured iron, yet two of our large works will together make a larger annual product than all the Belgians combined. More pig iron is made in Ohio by 50 per cent. than in Belgium, while Pittsburgh and the Shenango Valley make about as much as all France. Sweden makes less pig iron than the Lehigh or the Schuylkill Valley, although Swedish iron has long played such a prominent part in the trade of the world. Russia lags behind Illinois in annual tonnage, and from present appearances is hardly likely to catch up to that enterprising State.

In steel Germany makes a better showing as to the rate of increase than in pig iron, but even in that branch it lags very considerably behind the United States. Great Britain is making some progress in increasing its steel production also, but not rapidly. With a steel trade of puny proportions in 1870, only 16 years were needed to enable us to overtake the mother country in the production of steel. In one of these years we made twice as many steel rails as Great Britain. In 1888 and 1889 the race between the United States and Great Britain was neck and neck, but it is believed that in the past year the United Kingdom was again left in the rear. Passing from the three great leaders in the steel trade, it may be mentioned that all other countries in the world combined do not even make as much steel as Germany alone. Taking the pig iron and steel statistics for the entire world, it may be stated that excluding the United States the annual rate of production of pig iron at the close of 1889 showed a bare increase of 50 per cent. over 1878, but steel showed an increase of 225 per cent. In the same period precisely the United States made a gain in pig iron of 230 per cent., and in steel of 363 per cent. If the figures for 1890 were at hand they would show a heavy increase for this country and probably no increase for other countries.

The inference to be drawn from these statements and comparisons is obvious. The iron and steel industry of the United States is not growing simply because the demands of the whole civilized world are growing at the same rate, but, first, because the consumption of iron and steel in this particular country is growing at a faster rate than elsewhere in the world, and, second, because we have within our own boundaries the resources to meet the requirements of that consumption. In this respect, as well as in others, the United States is unique, and the experience of no other country can be a guide to our operations.

Some time since we republished in *The Iron Age* an admirable review of the American steel-rail trade. The only weak point in it appears to be that which has been most widely copied, and is going the rounds of the daily and the trade press. We allude to that part of it which deals with the productive capacity of the mills. It may be of interest to place side by side the figures of capacity and the actual shipments of steel rails weighing more than 56 pounds per yard during 1890:

Rail Capacity and Shipments.

	Rated capacity.	Shipments in 1890. Gross tons.
Illinois Steel Company...	925,000	413,850
Carnegie.....	600,000	304,659
Cambria.....	225,000	105,552
Pennsylvania.....	200,000	115,077
Lackawanna.....	225,000	138,737
Scranton.....	225,000	182,049
Bethlehem.....	200,000	128,262
Total.....	2,600,000	1,388,186

It is not stated, unfortunately, whether the rated-capacity figures so widely quoted are in net or in gross tons, and it must be noted that the shipments of the Carnegie firm do not include, as their rated capacity does, the Allegheny mill, but we feel convinced from a knowledge of the work done at different establishments, if pushed, that the possible output is not above 2,000,000 gross tons.

Rivals in the West India Trade.

Competition between Canada and the United States for the trade of the British West India Islands seems to be narrowing itself down simply to a question of profits, especially in the minds of the colonists whose trade is solicited. As against this most potential consideration the sentiment of loyalty seems to have little weight. The subject gains prominence at the present time, in consequence of the recent tour of the Canadian Minister of Finance, Hon. G. F. Foster, through Barbadoes, Trinidad, Antigua and Jamaica. As one of the local papers puts it, the close connection with the United States somewhat militated against any changes in the direction of the import and export trade, although the minister was prepared to offer strong inducements in the shape of differential duties, in the case of sugar about 25 per cent. on the amount exported. Mr. Foster also dilated upon the extent of territory to be supplied north of the St. Lawrence River, but in reply a Kingston editor had the audacity to remark that a sparcely occupied country can never offer as good a market for West India products as can a rival who boasts of a population twelve times larger. Moreover, merchants in Canada must offer facilities equal to those already granted by merchants in the United States and convince consumers that staples consigned to them are as good and as cheap.

The main difficulty with which the Dominion has to contend is simply one of geographical lines, as trade flows most naturally between contiguous territories and populations if there is sufficient diversity of products to make an interchange desirable. Moreover, a large trade has already become established between the British colonies and the United States, and is increasing rapidly, particularly since the introduction of steamship communication. This is most notably true of Jamaica, the most important of the West India Islands, where large amounts of American capital have been invested, particularly in the fruit industry, and of sugar and coffee this country takes the largest proportion. In exchange Jamaica imports hardware, machinery, implements and general merchandise equal to something like $3,000,000 per annum. Very recently the Bahama Islands are coming into notice as an attractive field for the culture of hemp. So long as Americans own the only railroad in Jamaica and in various ways are identified with important interests throughout the colonies, the Dominion Government probably has unexpected difficulty in

making reciprocal commercial arrangements that shall exclude the United States. On the other hand, there is no good reason why the islands should not coquette with both their suitors.

The Futility of Strikes

The Scotch railway strike, which has been fiercely contested since the demand for a ten-hour day was made, just before Christmas, is now virtually at an end, and the indications are that the railway men have wholly failed in their object. In all its characteristics this strike closely resembles that which recently occurred on the New York Central. The time was purposely fixed at a date when all the resources of the three great railroads of Scotland are taxed to their utmost and when interruption of traffic would prove most embarrassing. The immediate object was to paralyze every movement, thus resorting to coercion in bringing their employers to terms. These terms were, under instructions from the Amalgamated Society of Railway Servants, that the companies should at once issue an edict decreeing a working day of ten hours in every department of the service. There was to be no discussion, no consideration and no reservation. The demand was ten hours all around, and at once. The companies, it is stated, did not deny that there might be room for relaxation of working arrangements in several grades of workers. What they insisted on was that whatever grievances existed should be considered on their merits. They definitely declined to issue the edict of ten hours as a maximum day's work in every class of railway work, pronouncing it absolutely inadmissible. On these lines the struggle has continued, disorganizing the entire railway service of the Northern Kingdom during a period of six weeks, the closing scenes being attended with violence and incendiarism. Other resulting losses to the company and the public at large from the interruption of business have been incalculable. The loss in railway earnings alone was estimated at near $600,000. The losses and suffering entailed as concerns the workmen and those dependent on them, many of whom are now displaced, add another feature greatly to be deplored. Following so soon the failure of the Australian strike, the results must be disheartening.

Pending this struggle in Scotland there has been a difficulty nearer home, now happily settled, which threatened serious consequences. The Chicago and Erie Railroad Company discharged Train Dispatcher Scott for neglect of duty, and the conductors demanded that he should be reinstated. Grand Master Clark said "they did not care so much for Mr. Scott personally, as they did not want to dispute the right of the road to discharge a man for neglect of duty. But they wanted to find out what the policy of the management was with regard to the old employees in general. It was the principle of resisting wholesale discharges that the men wanted to defend." Simply stated, the difficulty in substance resolves itself into the same old issue contended for succesfully by the New York Central—viz., the right of a corporation to employ and discharge whom it pleases. The settlement was made on the basis that the officials persisted in their determination not to reinstate Scott, while the men received assurances satisfying them that their principle in the fight would be upheld. These facts appear on the surface, but further inquiry leads to the conclusion that firemen and switchmen alike, in obedience to the laws of their organization, refused to join in the fight, which had a disheartening effect. The truth is being more clearly demonstrated that strikes are only mischievous, and of all ulterior resorts in self-vindication the most harmful to organized labor. In this view the struggle across the water is of international concern.

Pig Iron Consumption.

The iron trade has long been prepared to learn that the output of pig iron in the United States would eclipse all previous records of our own or any other country. The figures, however, prove and events have shown that the phenomenal makes of the past year were in excess of our requirements. The boast of having reached the first place is not one which will give unalloyed pleasure to the iron trade. There is much more satisfaction, we believe, in contemplating the fact that consumption has developed in a very satisfactory manner. Since 1880 it has grown in the manner shown in the following table:

Consumption of Pig Iron, Gross Tons.

1880	3,900,415	1886	6,191,354
1881	4,982,565	1887	6,808,386
1882	4,963,278	1888	6,688,744
1883	4,834,740	1889	7,798,337
1884	4,229,280	1890	8,922,454
1885	4,348,844		

Consumption has, therefore, doubled in ten years, in spite of the fact that in 1890 the demand for permanent way of railroads was not large. It is interesting to note that in spite of that fact the greatest increase in the production was in Bessemer pig, which is responsible for 940,929 gross tons of the total increase of 1,599,061 tons. This proves that the output of steel for miscellaneous purposes must have grown tremendously. We known that, speaking generally, the puddling plants, too, were very active in 1890, so that the increase in the consumption of foundry irons cannot be credited with more than a part of the balance.

We omitted to state in the description of the Phœnixville Testing Machine, published in *The Iron Age* January 22, 1891, page 142, that we were indebted to the *Engineering News* of this city for a considerable part of the drawings and text.

Kansas City undertook, about a year ago, to enlarge her limits by taking in about 20 miles of adjacent territory. And now comes the Supreme Court of Missouri and declares that the annexation, not having had the consent of the Legislature, is unlawful and void. So Kansas City loses about 15,000 of her population.

Washington News.

(From Our Regular Correspondent.)

WASHINGTON, D. C., January 27, 1891.

Chairman Boutelle of the House Commiteee on Naval Affairs has submitted a very interesting report in connection with the bill providing the funds for naval expenditures during the next fiscal year. It is not the amounts which make it interesting, as comparisons of estimates and appropriations have little or no attraction for the general reader, but his comments upon the progress in naval construction are important. It might be said, however, in a general way, that the naval budget aggregates $30,955,000, or an increase of $6,870,000, due to meeting maturing obligations for new vessels.

In reference to this subject Chairman Boutelle says: "The remarkable rapidity with which the work of construction has been pressed of late has resulted in concentrating a large part of the expenditure within the coming year, and increased appropriation is rendered necessary to meet the greatly increased progress of the work. An illustration of the promptness and energy displayed in this regard may be found in the fact that on the day following the approval of the act authorizing the construction of three sea-going coast-line battle ships advertisements were issued inviting proposals upon general plans prepared by the Department, and that in three months after the act of authorization those three important vessels were under contract upon completed specifications that are believed to represent the most powerful and perfect war ships that have ever been designed."

The chairman says that with the present progress, in April, 1893, when the naval review, authorized by Congress in honor of the Columbian Exhibition, is held in New York harbor the fleet of modern vessels in the United States Navy which will participate or will be carrying the American flag will embrace the following most powerful and fleetest war ships of their class in the world.

Name.	Type.	Tonnage.
Armored Vessels.		
First rate:		Tons.
New York	Cruiser	8,150
Maine	Cruiser	6,648
Texas	Battleship	6,314
Puritan	Monitor	6,060
Second rate:		
Monterey	Monitor	4,003
Amphitrite	Monitor	3,815
Miantonomoh	Monitor	3,815
Monadnock	Monitor	3,815
Terror	Monitor	3,815
Third rate:		
Harbor defense ram		2,050
Unarmored Vessels.		
First rate:		
Cruiser No. 6		5,500
Second rate:		
Chicago	Protected cruiser	4,500
Baltimore	Protected cruiser	4,400
Philadelphia	Protected cruiser	4,300
Newark	Protected cruiser	4,083
San Francisco	Protected cruiser	4,083
Charleston	Protected cruiser	3,730
Boston	Cruiser	3,189
Atlanta	Cruiser	3,189
Raleigh	Cruiser	3,000
Cincinnati	Cruiser	3,000
Third rate:		
Cruiser 9	Cruiser	2,000
Cruiser 10	Cruiser	2,000
Cruiser 11	Cruiser	2,000
Bennington	Gunboat	1,700
Concord	Gunboat	1,700
Yorktown	Gunboat	1,700
Dolphin	Gunboat	1,485
Gunboat No. 5	Gunboat	1,000
Gunboat No. 6	Gunboat	1,000
Fourth rate:		
Vesuvius	Dynamite gun vessel	970
Petrel	Gunboat	870
Practice vessel	Gunboat	835
Torpedo cruiser	Gunboat	750
Cushing	Torpedo boat	100
Torpedo boat No. 2		112

In commenting upon this flattering condition of affairs, Chairman Boutelle adds:

"It is a matter of special gratification that within a few years we have emerged from a condition of dependence upon foreign countries for a large portion of the most essential materials for the construction of our ships, armor and guns, and have already secured the establishment of works within our own borders that are capable of supplying all our wants in regard to material and munitions of war, and that have been created upon so grand a scale as to receive the enthusiastic encomiums of the most distinguished military and naval experts of our own and foreign countries. The Washington Gun Factory and the Bethlehem Steel Forging Works have recently been declared by one of the most eminent ordnance officers of the British army as 'superior to any others in the world;' and the same distinguished foreigner has stated his opinion that the high power rifled guns constructed by the Navy Department in Washington 'are the best and most powerful guns afloat or ashore anywhere in the world.' This is a high tribute from a representative of the most formidable naval power in the world, and in view of the comparatively brief period during which we have been earnestly engaged in the work of naval construction, it encourages the hope that we may soon resume upon the ocean the splendid prestige our nation enjoyed for so many years. Our advance has not been confined to the remarkable improvement of our factories and guns, but in the designing and construction of the highest type of modern vessels we have already ceased to imitate, and are now building on original plans some of the finest, fastest and most powerful war ships in the world.

"In view of the large appropriations rendered necessary to prosecute the work of construction in hand, the committee have confined their recommendation in the present bill to the authorization of one fast cruiser of the size and type of the one authorized in the last appropriation bill and known as cruiser No. 12. This valuable ship will be another wonderfully swift commerce destroyer, in which the minimum speed has been made a knot higher than in any previous requirement, and will prove a timely and valuable addition to our naval force. Beyond the national pride in the resumption of our ancient prestige on the high seas, and the feeling of added security furnished by our progress in obtaining the most available and reliable means for the defense of our coasts, the people of the country recognize the important fact that in the work of rehabilitating our navy the Government is stimulating great manufacturing enterprises of inestimable benefit to the country, providing employment for vast numbers of our own people in the mines, on the railroads, in the foundries and workshops, at the forge, the lathe and bench, in the laboratory and drafting room, including every avocation of industry and skill, all of whom in turn furnish employment for the producers in the factory and on the farm, while the result of their joint labors is to increase the power, protect the honor and promote the prosperity of our great nation, by setting afloat a navy that will not only be an outer bulwark of defense in case of war, but that we trust may prove in peace the messengers of good will to other lands and show to us and to the world again that 'commerce follows the flag.'"

The officers of the Bureau of Steam Engineering are having almost daily evidences of the attention which their work has attracted among the marine engine builders of England, France and Germany. Their correspondence in this line shows the interest which the experts in those countries are taking in the work of naval reconstruction on modern principles in this country.

Engineer in Chief Melville and Chiefs Towne and Moore take great pleasure in communicating any proper information in the line of inquiry respecting the development of certain principles not yet established as recognized elements in the application of mechanical force. The triple screw is one of these still unsettled problems. The foreign mechanical experts have not been successful or have shown considerable timidity in applying this method of attaining high speed. The American engineers are striking out boldly in the direction of triple screws and other appliances which are entirely new to the world of mechanical engineering. The engines intended for the torpedo cruiser are said to be the finest of the class ever designed, and possess many features which are entirely new to the modern marine engine. When it is remembered that five years ago the Government of the United States was not known among the great maritime nations as holding any position as a naval power in modern hulls, machinery and ordnance, the marvelous progress achieved can be somewhat appreciated.

The new steel ships built in that brief space of time have no superiors in their class, the engines by which they are propelled have developed more horse-power and greater speed than possessed by any vessels of the same type afloat, and the high power guns are without rivals in any nation. If this is the pace of five years' progress, it is not difficult to form some idea of the march of the future. Secretary Whitney secured the designs for one of the ships now being built from one of the finest shipbuilding firms in England. That same ship is not the equal of any of the large vessels being constructed from American models.

The final report of the board on gun foundries and steel forgings for high-power guns has been submitted by the President to the Senate. The document is a comprehensive exhibit of the progress made in both lines of warlike industry. The report mentions the advance made in the establishment of plants for heavy steel forgings, and also shows that steel forgings are still largely imported into the United States, and favors the creation of plants in different sections where the home market may be supplied from home sources. It also favors more gun factories and encouragement of steel manufacturers for high-grade production.

The Alliance Representatives-elect who have been in Washington surveying the ground of their new and novel labors of law making have advanced many crude notions on economic questions. From their way of talking the campaign of 1892 will be fought on the lines of free silver, free trade and anti-monopoly.

Hoop-Iron Tests.—The Standard Oil Company, who use large quantities of hoop iron for their petroleum barrels, test every carload as received. The Portage Iron Company of Duncansville, Pa., owned by A. R. Whitney & Co. of New York, furnish them. Among the tests recently made at Bayonne are the two following:

	1.	2.
Dimensions, inch....	$1\frac{3}{4}$ x 0.058	$1\frac{23}{32}$ x 0.061
Tensile strength, lbs.	56,600	58,700
Elongation, per cent.	13.5	15.6

The specifications call for a tensile strength of 50,000 pounds and for an elongation between 7 and 15 per cent.

The New South Mining and Mfg. Company of Ashville, Ala., have recently purchased 10,000 acres of mineral land in St. Clare County, Ala., and will build a new mining town to be called Kenilworth.

MANUFACTURING.

Iron and Steel.

The difficulty between the Riverside Iron Works of Wheeling, W. Va., and their employees, mention of which has already been made in these columns, has been satisfactorily arranged. The steel plant of this firm has been extensively repaired and some new machinery has been added. It will resume operations during the present week.

The plant of the Millvale Iron Company, Limited, at Piitsburgh, which was closed down last month on account of troubles with the workmen, has again gone into operation. The men who were out on a strike were discharged, and new men were secured to take their places.

Announcement is made that the negotiations for the purchase of a number of iron and steel plants at Youngstown, Ohio, by an English syndicate are abandoned. The syndicate refused to pay the prices asked for some of the plants.

Alice Furnace, of the Wheeler Furnace Company, at Sharpsville, Pa., has been in blast 358 days, and has made 36,900 tons of Bessemer pig iron, or an average of 103 tons per day, with a coke consumption of 2159 pounds per ton of iron made. The furnace is 60 x 12 feet in size and is equipped with iron stoves.

Application has been made for a charter for the Adams Iron Company of Pittsburgh. The incorporators are George D. Blair, T. S. Blair, Jr., R. W. Carroll, W. H. Miller and F. Protzman, Sr. The new company propose to engage in the manufacture of stock for crucible steel by the Adams direct process. As yet it has not been definitely decided where the plant will be located.

The Central Iron and Steel Company of Brazil, Ind., was one of the principal creditors of the bankrupt Indianapolis Car Works. The former, through President Collins, have submitted a proposition to the Cincinnati creditors for the removal of the plant to Brazil. He will be backed in this way by the citizens of Brazil, though no effort in that direction has been made.

The new Niagara furnace of the Tonawanda Iron and Steel Company, Tonawanda, N. Y., was lighted Monday, the 19th inst., and made a successful start. This furnace plant has been completely remodeled under direction of Julian Kennedy of Pittsburgh. The furnace with the three Cowper-Kennedy stoves is entirely new and is equipped in the most complete manner known to modern furnace practice. The nominal capacity is 200 tons per day.

At Sheffield, Ala., nearly all the improvements and repairs on the Cole furnaces have been completed at a cost of about $30,000.

It is stated at Charleston, S. C., that a company with a capital stock of $35,000 have been organized to establish a sheet-lead mill, which will be the first enterprise of this kind south of Baltimore, Md.

At the annual meeting of the Fort Worth Iron Company the following officers were elected: Oscar Lynch, president; Clay Sandidge, vice-president; S. T. Bibb, secretary; W. B. Harrison, treasurer. The company show that 1890 was the most prosperous year in their history. A cash dividend of 10 per cent. was declared and 18 per cent. passed to undivided profits.

A company with a capital stock of $100,000 are stated to be preparing to establish at Renfro, Ala., a rolling mill, pipe works and other industrial enterprises.

The Llano Improvement and Furnace Company of Llano, Texas, are having plans drawn by a Pittsburgh engineer for

the construction of a 200-ton iron furnace which they propose building as soon as the railroad is completed to the ore beds.

The Troy Iron Works of Troy, Ala., having suspended on account of the scarcity of coal during the recent strike, will resume operations shortly.

It is stated that the Dunlap Coal, Iron and Railway Company of Dunlap, Tenn., will resume operations early in February.

The West End Furnace, which was recently completed at Roanoke, Va., will during the present year be followed by a rolling mill which will be constructed and operated by the same company.

The Pennsylvania Steel Company of Sparrow's Point, Md., are reported to have bought a half interest in Moler & Keller's iron mines, near the Virginia ore bank at Harper's Ferry, West Virginia.

The Salem Iron Works, recently organized at Salem, Va., are making preparations to establish their wire-nail works.

The DeBardeleben Coal and Iron Company of Bessemer, Ala., have blown in their seventh furnace at Bessemer.

P. H. Lyon and others of Ball Ground, Ga., are said to be organizing a company to erect an iron furnace at that place. There are valuable mineral deposits in that vicinity.

The new rolling mill at Fort Worth, Texas, is nearing completion.

The plant of the Centre Iron Company, at Bellefonte, Pa., consisting of a blast furnace and muck-bar mill, was offered at sheriff's sale on Saturday, the 24th inst. Owing to the low bids made, the sale was postponed until a later date.

Edge Hill Furnace, of the Crane Iron Company, at Edge Hill, Pa., resumed operations last week. It has been relined and otherwise repaired.

The directors of the Inter-State Iron Company, of Reading, Pa., have elected the following officers: President, A. D. Fielding; secretary, Harry Hines; treasurer, John Brobst; superintendent, Henry Harris. The company have a capital of $80,000, and the works will probably be located at Reading, providing the citizens render their assistance to the enterprise. This is the company controlling the patents whereby old rails are converted into merchant bar iron. It is the intention of the promotors of the enterprise to begin operations at once.

It is stated that the Ironton Steel Company of Duluth, Minn., will so amend its articles of incorporation that it will be empowered to manufacture tin plate.

The Trenton Iron Company of Trenton, N. J., are building several iron elevators for use in raising cars and locomotives on elevated tracks, some of which are to fill orders from Peru and Chili.

The annual meeting of the Struthers Furnace Company, Struthers, Ohio, lessees of the Anna Furnace, was recently held at Youngstown. The following Board of Directors was elected: Hon. Thomas H. Wells, John C. Wick, Myron C. Wick, H. S. Pickands of Chicago, Col. James Pickands and Samuel Mather of Cleveland, and Robert Bentley, who organized by electing Col. James Pickands, president; Myron C. Wick, vice-president; and Bobert Bentley, secretary, treasurer and general manager. The lease of the furnace was renewed for one year, dating from July 1, and it was stated that improvements and repairs amounting to about $15,000 would be made, including a complete boiler plant.

Work has been resumed at Middlesborough, Ky., on the plant of the South Boston Iron Works.

The Lake Steel and Iron Company have been chartered in South Carolina with the following incorporators: M. M. Strauss, Leon Wallenstein, I. I. Strause, Ed. Whitlock, Louis Stein, A. H. Jacobs and Samuel Proskaner. The capital stock is not to be less than $100,000 nor more than $1,000,000, and the object of the company is to acquire real estate and to own and erect iron furnaces. A tract of iron-ore lands near Yorkville, S. C., has been purchased, on which the company propose to build furnaces and steel works as soon as practicable.

The new rod mill of the Kilmer Mfg. Company of Newburg, N. Y., is about completed, and will probably be in full operation by February 1.

At Richmond, Va., the James River Steel and Iron Company, to have a capital stock of not less than $200,000 and not more than $1,000,000, have been incorporated.

The machinery of the old Minersville Furnace, now known as the Marion, located at Minersville, Pa., and owned by the Philadelphia and Reading Coal and Iron Company, has been purchased by the Covington Iron Company, of Covington, Va., and will be used in fitting up a plant at the latter place.

Machinery.

The employees of the Westinghouse Electric and Mfg. Company of Pittsburgh will hereafter be required to work all day on Saturday on account of the pressure of orders. It has been the custom heretofore to stop work at noon on that day.

The Wagner palace-car shops, at Buffalo, N. Y., are to be enlarged by the erection of a new shop 140 x 458 feet, having accommodations for 23 tracks. The building is to be of brick and stone, and will cost about $60,000. Operations will begin at once, and it is expected to have the shop completed by July 1, when the company will have 68 tracks under roof.

Llewellyn Brothers of the Columbia Iron Works of Los Angeles, Cal., have secured the contract, aggregating $50,000, for all the iron columns and beams of the Chino Beet-Sugar Factory, now in course of construction at that place.

The Ball & Wood Company, of Elizabeth, has been chartered by the Secretary of the State of New Jersey to manufacture and sell steam engines. The capital stock is $3,000,000, of which $100,000 is paid up.

The machine shop and foundry of Williams Brothers, at Greensburg, Ind., were recently wrecked by fire.

The annual meeting of the stockholders of Gordon, Strobel & Laureau, Limited, blast-furnace contractors, was held last week at their main office in Philadelphia. Reports for the year 1890 were very favorable, showing that ten furnace plants had been built or remodeled, and the Gordon fire brick stoves added to each of them, and the improved Corliss blowing engines with special patented valves made by the company, were manufactured and introduced in many places. Reports also showed new additions to their works, boiler and pattern shops. The officers elected for the ensuing year were F. W. Gordon, chairman; James C. Gray, vice-chairman; V. O. Strobel, secretary and treasurer.

John W. Chesire & Sons have recently purchased the foundry and machine shops of Gravely & McCabe, at Martinsville, Va., and will enlarge and improve the plant at an early date.

The foundry and machine shop owned and formerly operated by Murray & Stevenson, at Anniston, Ala., has been sold at sherriff's sale for $10,000, local parties being the purchasers. The works had been idle two years, since the death of the senior partner, when a disagreement arose between the heirs and the surviving member of the firm. The works will be put in operation at once, and will give employment to about 100 skilled mechanics.

The foundry of Haight & Clark, at Albany, N. Y., was destroyed by fire on the 19th inst. The loss on buildings and machinery is about $6000, fully covered by insurance.

The new foundry of Doherty Brothers, recently moved from Ayer to Lowell, Mass., has been put in operation.

At a meeting of the creditors of Armstrong Brothers, boiler makers, at Springfield, Ohio, Robert H. Foos and Robert Johnson were appointed trustees, with the consent to proceed with the operation of the shops.

We are informed by the Ball Engine Company that their works will not be moved to New Jersey, nor will they establish a branch there. The works will remain at Erie, Pa.

The building and machinery of the Standard Motor Company and the Northwestern Expanded Metal Company, at Hermosa, Ill., near Chicago, were completely destroyed by fire on January 20. The Standard Motor Company were formerly known as the Belding Motor and Mfg. Company, and were makers of electiric motors for street cars and other purposes. They recently purchased the building of the Northwestern Expended Metal Company, had stocked it with machinery and were on the eve of starting into active operation with a large force of workmen. The Expanded Metal Company occupied a portion of the building temporrily. The total loss is placed at $160,000, most of which is covered by insurance. The motor company will rebuild at once.

Greenlee Bros. of Chicago, manufacturers of wood-working machinery, made a large shipment of their automatic saws and mortising and planing machines to Japan last week. This machinery is intended for manufacturers of tea boxes and its introduction is a recent development of Japanese enterprise. Ralph Greenlee and his family have been abroad since July and are now doing that part of the world.

The Duplex Rotary Engine Company, 70 La Salle street, Chicago, have lately constructed a rotary engine having a capacity of 50 horse power. It was built at the works of the Automatic Mowing Machine Works, Harvey, Ill. A test was made of it there on the 15th inst., which was attended by a large number of gentlemen interested in the enterprise and in mechanics generally. The test was in all regards satisfactory. The engine developed more power than its constructors anticipated, and that without an excessive use of steam. The company have lately put in an engine for the Diamond Prospecting Company, 15 and 17 North Clinton street.

The Stirling Company, Pullman Building, Chicago, are in receipt of a very interesting letter from the Ætna Iron and Steel Company of Bridgeport, Ohio, which reads as follows: "We have had the misfortune, through gross carelessness on the part of one of our engineers, to burn all the tubes and melt all the tile in our No. 3 boiler, owing to lack of water in the same. Fortunately, however, we are unable to discover any serious damage to the boiler shells, and we have ordered from Jas. P. Witherow, for our account, tubes to replace the burnt ones. The only satisfaction that we can derive from this misfortune is that it demonstrates conclusively that the Stirling boilers cannot he exploded from low water."

The Brosius Sewing Machine Company of Atlanta, Ga., it is stated, will be ready to commence operations about the middle of February. The company have

60 hands at work and have booked orders for 16,000 machines.

The Dilley Iron Foundry, at Palestine, Texas, is at present engaged in making a pair of pumps for a local ice factory.

The machine shops of the Memphis and Charleston Railroad Company are rapidly approaching completion at Sheffield, Ala.

The Knoxville Car Wheel Company, at Knoxville, Tenn., are erecting a machine shop.

A machine shop is being established at Chattanooga, Tenn., by A. E. Duell and John Wolf.

The H. O. Kerns Iron Foundry was recently destroyed by fire at Sutherlands, Va.

A fire recently broke out in the iron foundry of Golden Bros. of Columbus, Ga., destroying considerable valuable machinery and producieg a loss of $30,000, on which there was an insurance of about $12,000.

The iron foundry of Benj. Bowering, at Fredericksburg, Va., has recently been purchased by a company of which Charles Tyler of Baltimore is president. The new company will enlarge the capacity of the plant and add a number of improvements.

The foundry and machine shops of Gravy & McCabe, at Martinsville, Va., have been purchased by John W. Cheshire & Sons, who will enlarge the plant and add a considerable quantity of new machinery.

Hardware.

The Chinese Stove Polsh Company, Centralia, Ill., have been organized with a capital stock of $150,000.

At the annual meeting of the Putnam Nail Company, Neponset, Boston, Mass., held on the 14th inst., the following officers were elected: John S. Fogg, presipent; John H. Buttrick, vice-president; John Mears, clerk, and W. W. Whitmarsh, treasurer. These gentlemen. with W. S. Packer, constitute the board of directors. The company have enlarged their plant, so that the capacity is now said to be 9 tons a day.

The annual election of the Bucher & Gibbs Plow Company, Canton, Ohio, was held on January 9. The old officers were re-elected, and are as follows: J. R. Bucher, president; F. E. Myers, vice-president; H. A. Cavanagh, secretary and treasurer; Lewis Gibbs, superintendent, and E. W. Gibbs, assistant superintendent, all of whom, together with P. A. Myers, comprise the Board of Directors. The company report a very satisfactory trade for 1890, and orders booked thus far this year are regarded as indicating an excellent business during 1891.

Butterfield & Co., Derby Line, Vt., manufacturers of taps and dies, will occupy their new factory about April 1. The building is a 153 x 30 feet two-story fire-proof brick and iron structure. This firm started in 1879 in a very small way, and their ever-increasing business has necessitated more commodious quarters and better facilities. They advise us that there has been no time during the past three years that they have not been obliged to run a portion of their machinery overtime to fill orders. They also have a branch establishment at Rock Island, Canada.

The Albany Horseshoe Nail Company, Albany, N. Y., have been incorporated with a capital of $250,000. The company are formed to manufacture horseshoe nails, and are reported to have control of an invention which comprises a machine to turn out a complete horseshoe nail in itself without the nail undergoing any additional work on it. The trustees of the company for the first year are: Timothy J. Sullivan, James H. Manning, Henry L. Smith, William B. Page, Nicholas T. Hussey, Chauncey P. Williams, Chauncey P. Williams, Jr., David F. Williams, Henry J. Sporborg, Jacob S. Friedman and Peter Ehlers.

N. R. Streeter & Co, Groton, N. Y., advise us that their manufacturing capacity has been entirely inadequate to meet the increasing demand for their goods during the past year, they being about 75 tons behind their orders at a time which should have been the close of the season. They are now doubling their capacity, also putting a side track to their factory, and expect to fill orders promptly in the future. Besides manufacturing Sensible irons, smoothing, polishing and pressing irons, they make a line of Sensible hardware novelties.

French, Watson & Co., Hartford, Vt., advise us they are very busy, having added more help to their works, and at present have all the orders booked for steel goods that they can fill until the season closes

The Thorne Wire Hedge Company, Chicago, whose affairs have been in an unsettled condition for the past five years, durmg which time the Kelly Barb Wire Company have been making their well-known wire in a limited way, have purchased a tract of land near Hammond, Ind., where they expect to build a large plant after reorganization.

At the annual meeting of the stockholders of the National Hedge and Wire Fence Company of Pennsylvania, held at their office in York, Pa., on the 16th inst., the following directors were elected: D. W. Crider, John T. McFall, W. K. Eisenhart, W. T. Nelson, C. A. Hawkins, James W. Kilgore and W. F. Ramsay. The board organized by electing D. W. Crider president; Wm. F. Ramsay, secretary; Jonathan Jessop, treasurer; W. T. Nelson, general manager, and C. A. Hawkins, attorney.

The Van Wagoner & Williams Company, 82 Beekman street, New York, have bought a piece of land 500 x 312½ feet on the Lake Shore Railroad, in Cleveland, Ohio, about 2 miles from the post office, on a portion of which it is their intention in the coming spring to erect a factory and foundry, where they will do all their manufacturing. As a large part of their business is in New York, they will continue to have headquarters and keep a stock in this city.

At a meeting of the stockholders of the Union Steel Screw Company, Cleveland, Ohio, held January 15, the following directors were chosen for the ensuing year: Henry B. Payne, Fayette Brown, William Chisholm, L. M. Hubby, Amos Townsend, J. H. Wade, Jr., and S. Sickles. The following officers were subsequently elected at a meeting of the directors: Fayette Brown, president; William Chisholm, vice-president; S. Sickles, secretary, and J. A. Bidwell, superintendent.

A. M. Ross & Co., Ilion, N. Y., in a card to the trade correct the impression that the Remington works closed with their financial trouble. They state, as successors of Remington Agricultural Company, that the works have not been idle, and that their trade has increased yearly, with a bright outlook for the future.

St. Louis Shovel Company, St. Louis, advise us that they are making quite extensive additions to their plant, including both buildings and machinery. They enlarged their works considerably about 18 months ago, and are now adding to them again. The present additions increase their capacity about 30 per cent.

The Kenton Lock Mfg. Company, Kenton, Ohio, although actually operating their works at the point named a little less than a year, have succeeded in establishing an excellent trade for their line of builders' hardware, and are now exceedingly busy. A recent shipment of two carloads was made to Chicago. Their line, while already extensive, is being constantly augmented by additions in both style and finish.

Ithaca Gun Works, Ithaca, N. Y., during the past few months have been pushed with orders which have required them to materially increase their force, and are running night and day. Notwithstanding that the prices of labor are tending upward, no increase has been made in the price of the goods.

Cortland Wrench Company, Cortland, N. Y., are putting in new machinery and tools to enable them to turn out an increased quantity of goods.

Miscellaneous.

The Oliver Iron and Steel Company of Pittsburgh have bought 11 acres of surface land, on which they propose to erect houses for the employees of the extensive coke works which they are erecting on the coal land leased by them from the Shaw tract in North Union Township, Fayette Country, Pa. The consideration was $250 per acre.

The Lozier-Yost Seamless Tube Company have been incorporated at Shelby, Ohio, with a capital stock of $100,000. The company will manufacture cold-drawn weldless steel tubes used in the manufacture of bicycles. The following are the officers and directors: D. L. Cockley, Shelby, president; H. A. Lozier, Cleveland, vice-president; B. J. Williams, Shelby, secretary and treasurer; J. L. Yost, Toledo, general manager. Directors: J. L. Yost, Toledo; H. A. Lozier and N. A. Gilbert, Cleveland; B. J. Williams, J. A. Seltzer and D. L. Cockley, Shelby.

At Norfolk, Va., extensive water-front property opposite the Portsmouth Navy Yard has recently been purchased by a syndicate of Northern capitalists to locate a number of manufacturing enterprises. The sister city of Portsmouth is likewise participating in this new development, and a number of wealthy business men of the latter place are organizing a company to manufacture a variety of articles, handled extensively by the Southern merchants. In Norfolk County all such property is exempt from taxation for a number of years, and the numerous water courses intersecting the county from the harbor offer inviting sites. The work of development is still unabated at Lambert's Point, the coaling station of the Norfolk and Western Railroad Co., and which is in reality a water-front suburb of Norfolk. The Industrial Company, reported organizing with a capital stock of $1,000,000, are now in negotiations for the location of a number of important plants that will be reported in *The Iron Age* as soon as negotiations are determined.

Among recently authorized corporations in Illinois are the following: Jones Positive Nut Lock Company, at Chicago; capital stock, $100,000; to manufacture railroad specialties; incorporators, Thomas D. Jones, Charles D. Anderson, Joseph Dirschmidt. The New Process Welding and Spinning Company, at Chicago; capital stock, $300,000; welding and spinning copper, brass and other materials; incorporators, Mortimer McRoberts, George D. Cook and William L. Throwbredg. The Merriam Steam Pipe and Boiler Covering Company, to manufacture the Merriam mineral wool and hair felt covering for steam pipes and steam boilers; capital stock, $100,000; incorporators, George W. Cole, Edith A. Merriam and William C. Collins. Blair Mfg. Company, to manufacture and deal in pumps, cylinders, &c.; capital stock, $10,000; incorporators, Phil. Stimmel, Eugene Smith and G. W. Blair.

TRADE REPORT.

Philadelphia.

Office of *The Iron Age*, 220 South Fourth St., PHILADELPHIA, Pa., January 27, 1891.

The events of the past week have not been encouraging to the Iron trade. The position is not worse than it was on date of our last report, but there is certainly not the improvement that was hoped for, and if things have held their own it is about as much as can be claimed. As a general statement, this covers the market pretty thoroughly, but specific details will be found under the usual headings.

Pig Iron —The feeling is not of a very hopeful character, and prices are beginning to show some irregularity. Outside lots have been offered at figures less than those usually quoted, and the result is seen in a renewed indisposition to buy anything that is not actually needed. This feeling is further confirmed by the publication of Mr. Swank's statistics, showing that stocks are 400,000 tons larger than they were at corresponding time a year ago. Of course, at the prices now current, it is impossible for them to shrink very much further, but the improvement may be deferred, and probably will be, until some of this surplus is got out of the way. But stocks are not unusually large, and, if that was the only difficulty, the market would probably soon rally. The real source of the weakness is found in the fact that consumption is decreasing, while there is no evidence that production is decreasing in proportion. There has been a very considerable decrease in production and a still further decrease is in prospect, but consumers get the impression that for every ton of Iron they need 2 or 3 tons are offered, and while this continues prices cannot be other than weak and unsettled. The actual surplus in production may not be more than 1 or 2 per cent., but it is just that little surplus that keeps the market down. Hence the prospect cannot be regarded with any degree of hopefullness as regards its immediate future. The turn may come sooner than seems probable, but neither buyers nor sellers act in a manner to indicate any such expectation so far as they are concerned. Under these conditions it is difficult to give satisfactory quotations. The difference in quality, the difference in quantity and in time for delivery, and in terms of settlement, and in the desire to realize, are important elements, and vary in almost every transaction, so that we can do little beyond giving general quotations, with the remark, that some brands are pressed for sale, without regard to a matter of 25¢ ℔ ton in price, while others are held with some show of steadiness. There has been a great deal of business done during the past few days, due more, however, to special quotations being made, than to any general improvement in the demand. Ordinary asking prices for lots delivered in consumers' yards are about as follows:

Ohio Softeners, No. 1x	$19.00	@	$19.50
Ohio Softeners, No. 2x	18.00	@	18.50
Standard Penna, No. 1x	17.50	@	18.00
Standard Penna, No. 2x	16.50	@	17.00
Medium Penna, No. 1x	17.00	@	17.50
Medium Penna, No. 2x	16.00	@	16.25
Virginia, No. 1x	16.75	@	17.50
Virginia, No. 2x	15.50	@	16.00
Standard Neutral All-Ore Forge	14.50	@	15.00
Ordinary Forge Cinder mixed	13.50	@	14.00
Charcoal Car-Wheel Iron	22.00	@	26.00

Spelgeleisen.—There is very little demand at present, but German is offered at about $29.50, duty paid, and English at $1 more. Ferro is irregular, but from $61.50 to $62.50 seems to be about what buyers pay for 80 % at seaboard, but there is not much doing.

Steel Billets.—Market quiet but firm. There is some inquiry, and at prices recently ruling fair-sized orders could be had, but makers quote $28.50 and upward for lots delivered in consumers' yards. Bids of $28 for 500-ton lots have been declined within the past week.

Steel Rails.—There are no new features in the market to-day. There is very little demand, and this would probably be the case even if prices were $2 or $3 ℔ ton lower, so that it is not a question of price. Rails will be wanted pretty soon, however, and it is expected that mills will be able to employ more of their capacity than has been the case for some weeks past. Prices are nominally $30 at mills, and there is no reason for believing that this figure can be shaded.

Muck Bars.—The market is dull and business on a very limited scale, as holders want more money than buyers are inclined to pay. A few small sales have been made at from $27 to $27.25, delivered, but buyers of large lots do not bid more than $26.50 @ $26.74, so that for the present active business is in abeyance.

Bar Iron.—Business in this department is very dull. The dullness is not due to any disagreement as regards prices, but is simply an absolute scarcity of business. Consumers need comparatively little material, while all the mills are looking sharply around for business, and to secure anything worth while, are not to a matter of $\frac{1}{10}$¢ in price. Quotations, therefore, can only be given in a general way at 1.80¢ @ 1.85¢, but on good-sized orders, with immediate specifications, mills will make concessions, some more, some less, according to the condition of their order books.

Skelp Iron.—There is very little demand, although sellers are willing to shade prices liberally to secure good-sized orders. Nominal prices are from $1.75 to $1.80, delivered, for Grooved Skelp, and for Sheared about 1.85¢ @ $1.90.

Plates.—Business is still very much smaller than was anticipated, so that competition is close and prices inclined to droop. Inquiries appear to be more numerous, however, and there is an impression that a great deal of business must come on the market before long, but with so many after it the chance of any general improvement is not one of the immediate probabilities. Prices are irregular and hard to quote, and this is specially the case with Steel, which in some instances can be bought at same price as low priced Iron. General quotations, however, are about as follows, for lots delivered in consumers' yards:

	Iron.	Steel.
Ship Plates	2.00 @ 2.10¢	2.10 @ 2.20¢
Tank	2.00 @ 2.10¢	2.10 @ 2.20¢
Bridge Plate	2.05 @ 2.15¢	2.15 @ 2.25¢
Shell	2.30 @ 2.40¢	2.40 @ 2.50¢
Flange	3.10 @ 3.20¢	2.60 @ 2.70¢
Fire-Box	3.75¢	3.75 @ 4.25¢

Structural Material.—The position is very much the same as that defined in our recent reports. There is some business offering all the time, and a good deal more being figured on, but there is no such crowding at mills as was notable some time ago. This dullness leads to sharper competition, and to lower and irregular prices, varying according to size and character of order. The usual asking prices for lots delivered in consumers' yards are about as follows: Angles, 2.05¢ @ 2.15¢; Sheared Plates, 2.10¢ @ 2.20¢, and from 10¢ to 20¢ more for Steel, according to requirements. Tees, 2.5¢ @ 2.6¢; Beams and Channels, 3.1¢ for either Iron or Steel.

Sheet Iron.—There is less complaint of dullness in this department than in several others. Prices are a trifle irregular, and a shade lower probably on very desirable orders, but there is no quotable change in prices, which for the best makes remain at about the following figures:

Best Refined, Nos. 14 to 20	3.00¢ @ 3.10¢
Best Refined, Nos. 21 to 24	3.15¢ @ 3.25¢
Best Refined, Nos. 25 to 26	3.30¢ @ 3.40¢
Best Refined, No. 27	3.50¢ @ .....
Best Refined, No. 28	3.60¢ @ 3.70¢

Common, ¼¢ less than the above.

Best Soft Steel, Nos. 14 to 20	3¼¢ @ 3½¢
Best Soft Steel, Nos. 21 to 24	3⅓¢ @ 3⅝¢
Best Soft Steel, Nos. 25 to 26	3⅜¢ @ 3⅞¢
Best Soft Steel, Nos. 27 to 28	@ 4⅛¢

Best Bloom Sheets, 1-10¢ extra over the above prices.

Best Bloom, Galvanized, discount	@ 65 %
Common, discount	@ 67½ %

Old Material.—There is no business of any amount. Carload lots sell once in a while at from $23 to $23.50, delivered, but there is no business on which to base quotations of large lots.

Scrap Iron.—Good demand for choice Scrap, and at full prices. Sales at about the following quotations: No. 1 Railroad Scrap, $22.50 @ $23, Philadelphia, or for deliveries at mills in the interior $22.50 @ $23.50, according to distance and quality; $15 @ $16 for No. 2 Light; $15 @ $16 for best Machinery Scrap, $14 @ $14.50 for ordinary; $15 @ $16 for Wrought Turnings, $10.50 @ $11 for Cast Borings, and nominally $25 @ $26 for Old Fish Plates and $17 @ $18 for Old Car Wheels

Wrought Iron Pipe.—There is no special change to notice, the volume of business being moderate at discounts as last quoted, viz.:

Butt-Welded Black	47½ %
Butt-Welded Galvanized	40 %
Lap-Welded Black	60 %
Lap-Welded Galvanized	47½ %
Boiler Tubes	50 %

St. Louis.

OFFICE OF *The Iron Age*, 214 N. Sixth st., ST. LOUIS, January 26, 1891.

Pig Iron.—Business is in much the same condition as noted last week, and it is difficult to detect anything of an encouraging character in the general conditions governing this department. The demand is only fair, and consumers appear to think that bottom has not been reached so far as prices are concerned, and are acting accordingly. Sales of from 50 to 100 ton lots are about the maximum, and those whose wants call for larger quantities seem content with buying on this moderate scale, rather than enter the market at this time. Attention is at present directed to the idle furnaces in the South, anxiously awaiting their action. It seems quite probable that most of them will remain idle for some time, as it is pretty generally understood that present prices do not net the furnaces any great profit. Under the circumstances an idle furnace seems more desirable than one that is running and selling the Iron turned out. The stringency in the money market having to a great extent disappeared, furnacemen are beginning to hope that a way out of the present low range of prices is opening up. Business in a general way is improving all around, foundries, machine shops, bridge and car builders, boiler manufacturers—in fact, almost every line which is closely allied to the Iron trade—being in a flourishing condition. With these facts before them, it seems quite reasonable for furnacemen to anticipate an early return to more remunerative prices. Sales during the past week have been limited, and prices have been shaded in some instances so low that it seems strange that larger sales have not resulted. We quote as follows for cash, f.o.b. St. Louis:

Southern Coke, No. 1 Foundry,	$15.25	@	$15.75
Southern Coke, No. 2 Foundry,	14.25	@	14.75
Southern Coke, No. 3 Foundry,	13.75	@	14.25
Gray Forge	13.25	@	13.75
Southern Charcoal, No. 1 Foundry	16.75	@	17.25
Southern Charcoal, No. 2 Foundry	16.25	@	16.75

Missouri Charcoal, No. 1 Foundry	15.50 @ 16 00
Missouri Charcoal, No. 2 Foundry	14.75 @ 15.25
Ohio Softeners	17.75 @ 19.25

Barb Wire.—An active trade is reported, and jobbers and manufacturers alike are experiencing their share of it. The demand for this commodity has been steadily increasing, and in spite of the fact that a large part of the territory tributary to St. Louis has been closed against the use of Barb Wire on account of the weather, the demand from Southern points has been of such a character that mills have been able to market the better part of their product. Storehouses are unusually bare for this season of the year, and with the spring trade rapidly approaching the predictions of higher prices, which have been made in this report for three weeks past, seem in a fair way to be realized. In fact, mills are already beginning to advance their prices, slightly it is true; but with little or no stock on hand, and the spring trade almost upon them, a more rapid advance seems already assured. We quote as follows: Lots of Painted from mill command 2.80¢; Galvanized, 60¢ additional. Carload lots, 5¢ ℔ cwt. less than above prices.

Bar Iron.—In sympathy with Pig Iron, this departmtnt is uninteresting just now to sellers. Consumers are picking up odd lots as they are offered, and mills are making special inducements in the way of low prices to facilitate sales, and thus keep their books moderately filled. Manufacturers say the present lull is only temporary and will shortly give place to renewed activity. Large buyers are feeling the pulse of the market, and it would not be surprising if some good-sized orders were shortly placed, as the present range of prices is quite low enough to warrant it. We quote as follows: Lots from mill command 1.70¢ @ 1.75¢; small lots from store are quoted at from 1.85¢ to 1.90¢.

H. L. Williams, who has represented Naylor & Co. in St. Louis during the past year, has servered his connection with that house, and will hereafter represent the Southern Iron Company in the capacity of general sales agent. Mr. Williams will shortly locate in Cincinnati, where he will make his headquarters. Mr. Williams is one of the rising young men of the Western Iron trade, and the position he has accepted will give him an excellent opportunity to display his talents in a larger field. His many friends wish him well in his new territory.

Cincinnati.

(By Telegraph.)

Office of *The Iron Age*, Fourth and Main Sts., CINCINNATI, January 28, 1891.

The past two weeks have developed a more active inquiry for Pig Iron in our local market, and larger sales have resulted. The market has improved in tone, too, but prices have advanced little if any. The offerings of both mill and foundry grades of Southern Iron have been less free, but the supply has been fully ample to meet all wants, and the resumption of manufacture by several important stacks has encouraged consumers to hold to the belief of full reserve stocks to draw from. At the same time, the return of confidence to industrial enterprises accompanying the easy money market has stimulated larger purchases as well as larger inquiries. Most of the sales made have been for delivery during three to five months to come, but a few transactions have been made extending throughout the year. One feature to note has been the sale of larger proportionate amounts of Northern brands of Iron. Mottled Iron has continued scarce, and in not a few instances where buyers will allow, Gray Forge is being applied upon contracts calling for Mottled Iron. Car builders have formed an important factor among purchasers during the past week, but distribution of Iron has been quite general. Among the larger sales reported are 1000, 1000, 1500 and 1500 tons Northern No. 2 Soft, on the basis of $10.50 for Southern brands Birmingham. About 2400 tons Southern No. 3 have been sold on the basis of $10.25 cash, and some sales are reported even less. Gray Forge has been sold in moderate amounts at $10, but larger sales have been made at $9.75. Five hundred tons warrant Iron, Gray Forge, sold to-day on the basis of $9.85, cash, Birmingham. A lot of Nos. 1 and 2 Foundry is reported at the rate of 200 tons per month during the remainder of the year on the basis of $11.50 and $11.25 respectively. No. 2 Foundry has also been sold at $11, cash, Birmingham basis. Mottled Iron is virtually quotable at $9.50 ℔ ton, cash. On the Birmingham basis quotations are for cash, and are approximately as follows, f.o.b. cars Cincinnati:

Foundry.	
Southern Coke, No. 1	$14.25 @ $14.50
Southern Coke, No. 2	13.75 @ 14 00
Southern Coke, No. 3	13.00 @ 13.25
Ohio Soft Stone Coal, No. 1	17.00 @ 17.50
Ohio Soft Stone Coal, No. 2	16.00 @ 16.50
Mahoning and Shenango Valley	17.50 @ 18.00
Hanging Rock Charcoal, No. 1	21.00 @ 22.00
Hanging Rock Charcoal, No. 2	19.50 @ 20.50
Tennessee and Alabama Charcoal, No. 1	18.00 @ 19.00
Tennessee and Alabama Charcoal, No. 2	18.50 @ 19.50
Forge.	
Gray Forge	12.50 @ 12.75
Mottled Neutral Coke	12.25 @ 12.50
Car Wheel and Malleable Irons.	
Southern Car Wheel	22.50 @ 23.50
Hanging Rock, Cold Blast	24.00 @ 24.50
Lake Superior Car Wheel and Malleable	21.00 @ 22.00

Chattanooga.

Office of *The Iron Age*, Carter and 9th Sts., CHATTANOOGA January 26, 1891.

The market just at the present time appears to be in a more uncertain condition than at any time during the past year. Notwithstanding the evidently increased demand and the tendency of prices to advance, some of the furnaces insist on quoting prices at very low figures on large round lots, and, as the majority of inquiries are for minimum lots, consumers hardly know how to purchase, and even on small lots there is quite a margin among the different stacks. A few of the Birmingham stacks have blown in; there is not the same disposition to start up that was expected would be when it was announced that the miners would resume work. During the past week sales have been made at $11.75 @ $13 for No. 1, evidently showing that for some reason prices are considerably demoralized, but, of course, these conditions cannot long remain. Time sales are more restricted than they were, and credit is more closely scrutnized than it used to be, but, upon the whole, there is no question but what prices are gradually advancing.

Louisville.

LOUISVILLE, KY., January 26, 1891.

Pig Iron.—Consumers who have delayed purchasing Iron are now in the market, and there is a fair inquiry both from the East and from the West. Purchases at tidewater are quite heavy, and we think the buying movement will spread so that a round lot of Iron will be sold to consumers in the West and Northwest. Prices remain low, but the extreme low offerings current during the first part of the month cannot be duplicated, and the market is on a basis of $10.25 for Gray Forge. There are isolated cases of sales at less than this, but furnaces are booking orders at $10.25, and can sell freely at this price. The increase in stocks, it is believed, arose from consumers in December preferring to use up all the Iron held in their yards, instead of ordering from the furnace, the tightness of the money market at that time making this appear the part of wisdom, so that it is not believed that the amount of Iron in the country to-day is greater than during December. The outlook is more encouraging for steady buying, but it is thought there will be no special advance, at least at present. We quote:

Southern Coke, No. 1 Foundry	$14.00 @ $14.50
Southern Coke, No. 2 Foundry	13.50 @ 14.00
Southern Coke, No. 3 Foundry	13.00 @ 13.50
Southern Coke, Gray Forge	12.50 @ 13.00
Southern Charcoal, No. 1 Foundry	16.00 @ 17.00
Southern Car Wheel	17.00 @ 20.00

Chicago.

(By Telegraph.)

Office of *The Iron Age*, 59 Dearborn street, CHICAGO, January 28, 1891.

The market has a discouraging aspect this week, although business is far from being stagnant. The trouble arises from the anxiety of sellers, who are forcing prices still lower in numerous lines. There is evidently not enough business to go round, and prices are made beside which those of a month since seem very high. It is not likely that this condition of affairs can continue long, as manufacturers are not realizing cost.

Bar Iron.—More inquiry is reported, and a great deal of business is evidently being held back until the market is thoroughly tested. Low prices have been made on local Iron for consumption at distant points, but the sellers now claim to be well fixed with work and quote 1.70¢ @ 1.75¢, half extras, for 100-ton lots. There is, however, but little difficulty in shading the price for orders at all desirable. Valley mills continue to quote 1.60¢ at mill. The Calumet Mill starts up next Monday in fine condition for a good run, with a nice lot of work already entered. Jobbers' prices are lower. They now quote 1.90¢ from store and 1.85¢ for carloads. The Car Axle Association maintain a nominal price of 2.20¢ on axles, but this is not being adhered to.

Pig Iron.—Transactions were less numerous the past week than the one previous, but several good-sized sales are reported. One Southern Coke company sold over 3000 tons of Soft Iron in various lots, realizing about $14.50 for No. 1 Soft. At the moment there are no other companies that will quote within a dollar of this price, and the bargains cannot be duplicated. The Southern situation is peculiar. At the very time the above sales were being made another Southern company obtained $16 75 for No 1 Foundry and $15.75 for No. 2 Foundry, in lots of 500 tons each. Still other lots of No. 2 Foundry were sold at $15.50. Southern Mottled is very scarce, and consumers are forced to take Gray Forge instead. Northern Coke Iron has been taken by buyers to some extent, but not in the same quantities as Southern. Concessions have been made in some cases which were not regarded as probable a week since, and therefore lead to the conclusion that bottom has not been touched. Makers of Coke Iron are rather pleased than otherwise at the prospect of a strike among the Connellsville Coke workers, if it should only last long enough to drive more furnaces out of blast and clean up the large stocks now on furnace banks. Reviewing the month, it may be said that it covered a period of heavy business for the time of year and the state of general trade, but the activity was almost entirely in local Coke and Southern Coke Iron. Very little Ohio and not much Lake Su-

perior Charcoal Iron was sold. The Charcoal Iron market is still quiet, with only an occasional transaction of a few hundred tons to break the monotony. The usual price is still $18, with slight shading under special circumstances. Speaking generally, the outlook now indicates a season of quietness, as inquiries are much lighter than they have been. We quote :

Lake Superior Charcoal	$18.00 @ $18.50
Local Coke Foundry, No. 1	15.00 @ 15.50
Local Coke Foundry, No. 2	14.50 @ 15.00
Local Coke Foundry, No. 3	14.00 @ 14.50
Local Scotch	16.00 @ ....
American Scotch	18.25 @ 18.75
Southern Coke, No. 1	16.00 @ 16.50
Southern Coke, No. 2	15.50 @ 16.50
Southern Coke, No. 3	14.50 @ 15.00
Southern, No. 1, Soft	15.50 @ 16.00
Southern, No. 2, Soft	14.50 @ 15.00
Southern Gray Forge	14.00 @ 14.25
Southern Mottled	14.00 @ 14.50
Tennessee Charcoal, No 1	18.50 @ ....
Alabama Car Wheel	22.50 @ 23.50
Coke Bessemer	17.00 @ .....
Hocking Valley, No. 1	17.50 @ .....

Plates.—Mills are offering Tank Steel here at very low prices. In fact, from present appearances Tank Iron is destined to step out, as the prices made by some Steel mills are lower than Iron prices. A contract for 2500 tons of Steel Ship Plates, to go to West Superior, was captured by an Eastern Pennsylvania mill. Local trade is rather quiet. On most classes of material coming under this head the mills are firm, so that no change is made in our quotations, viz.: Nos. 10 to 14 Iron Sheets, 2.75¢ @ 2.80¢; Steel Sheets, 3¼¢ @ 3¼¢; Tank Iron, 2.60¢ @ 2.70¢; Tank Steel, 2.80¢ @ 2.90¢ ; Shell Iron or Steel, 3.25¢; Flange Steel, 3.50¢; Fire-Box Steel, 4.25¢ @ 5.5¢; Boiler Rivets, 4¢ @ 4.25¢; Boiler Tubes, 45 % off for 1¾ inch or less; 50 % off for 2 to 4 inch.

Sheet Iron.—Thin Steel Sheets are in fair demand from manufacturing consumers, but Iron Sheets are dull. The latter are quoted at 2.80¢ @ 2.85¢, at mill, for No. 27, with desirable orders taken at lower rates. Jobbers quote 3.30¢ from store. Galvanized is again weaker, although the demand is quite heavy from almost all classes of consumers. Small lots of Juniata now sell at 65 % off.

Merchant Steel.—Large buyers are in the market for cheap Steels to stock up, but expect to buy at very low prices. They regard 2.30¢ for Open-Hearth Machinery a high price, and insist on getting greater concessions. Usual quotations are 2.40¢ @ 2.50¢ for Tire Steel, 2.40¢ @ 2.75¢ for Open-Hearth Machinery, 2.50¢ @ 3¢ for Open-Hearth Spring, 2.20¢ @ 2.30¢ for Bessemer Machinery and 2.50¢ @ 2.75¢ for Toe Calk. Tool Steel is slightly lower under competition for trade by leading houses, and now sells at 6.25¢ @ 6.50¢ and upward, according to quality and quantity.

Track Supplies.—The outlook for Steel Rails continues to improve, although business is by no means brisk. A number of fair-sized orders have been booked and inquiries are much better. The tone of the market is perceptible in prices, which are firmer than they have been, although quotations are as yet unchanged from $30 @ $31.50, according to size of order. Other Track Material is down. Spikes still sell in a slack way at $2.15, but large orders are being taken by the mills at $2 or even lower. Track Bolts with Hexagon Nuts are quoted at 3¢ @ 3.10¢ by some sellers, but this price is being shaded considerably by manufacturers further East. The heaviest drop, however, has taken place in Steel Splice Bars, which are now quoted at 1.75¢ @ 1.85¢, according to the size of the order. Eastern Pennsylvania competition is felt in this line. Several good transactions occurred the past week and other orders are in the market. Iron Splice Bars are dearer than Steel, being quoted at 1.95¢.

Old Rails and Wheels.—Old Iron Rails are reported to have been offered at $22 at East St. Louis. On the other hand, a sale is claimed to have been made at $22.75, Chicago. One transaction is known to have been made here at $22.50, and this is probably the market. Old Steel Rails are nominal at $14 @ $18.50, with no sales reported. Old Car Wheels are more active, with sales at $17.25 @ $17.50.

Scrap.—Plenty of old material is offered by out-of-town dealers, but the local trade report a steady improvement in the demand, with prospects for more business. Low-priced material is in strongest request, but Cast of all descriptions is very dull. Dealers' quotations are as follows ℔ ton of 2000 lb.: No. 1 Railroad, $19.50; No. 1 Forge, $18.50; No. 1 Mill, $14 Fish Plates, $22; Axles, $25; Pipes and Flues, $13.50; Horseshoes, $17.50; Cast Borings, $8; Wrought Turnings, $11.50; Axle Turnings, $13; Machinery Cast, $12; Stove Plates, $9; Mixed Steel, $10; Coil Steel, $16; Leaf Steel, $17, and Tires, $18.

Metals.—Lake Copper is still held at 15.25¢ in carloads. Casting brands are a little stronger and sold at 12¢, with considerable inquiry reported. Spelter has declined and is now quoted at 4.95¢ @ 5¢. The latter for spot, with a light demand. The week just closing has been one of unusual quietness in Lead circles. The effect of the improved statistical position at the beginning of the year has to a large extent been discounted, and the sudden advance of early January brought to a standstill. Notwithstanding present weakness and the possibility of still lower prices in the near future, the outlook for better markets by early spring is encouraging, as there is little prospect of increased production this year, and should financial conditions continue to improve the chances are we will have to import 15,000 tons. Since the sales of a week ago around 4.35¢ there has been but little business here to test values. The unfavorable reports from the East have lowered quotations to 4.25¢, nominally, but buyers are scarce, and it is difficult to draw out bids even at a lower figure. At St. Louis there has been a dull and steadily declining market. Opening at 4.30¢, the absence of pressure to sell forced prices down to 4.10¢, without takers except for car lots. Sales for the week will not exceed 300 tons, as the St. Louis trade seem to believe they will be able to buy next week at 4¢ should they want any.

Cleveland.

CLEVELAND, January 25, 1891.

Iron Ore.—About 15,000 tons of Ore have gone forward to the furnaces during the past week, against 36,000 tons for the same week last year, an illustration of the condition of complete inactivity existing in the Mahoning and Shenango Valleys. No sales of Iron Ore have been made during the past ten days, and none seem likely to be made for some weeks to come. Eastern furnacemen are said to have asked for prices on certain high-grade Bessemer Ores from the Menominee district, but in the unsettled condition of the Pig-Iron market very little information can be given. There is talk of lake freights being established on the basis of 85¢ ℔ ton, Escanaba to Cleveland, but nothing definite can be learned beyond the engagement of a steamer, Escanaba to Tonawanda, at $1.10 for 1891. The shutdown in the valleys south of here seems to have put a stop to the negotiations recently carried on for especially desirable grades of Bessemer Ores for winter shipments.

Pig Iron.—More Pig Iron has been sold during the past seven days than during the preceding four weeks. There is an excellent demand for strong Foundry and Ohio Silveries, and there have been a few sales of Bessemers at prices a trifle above those obtained before the furnaces shut their gates to the Coke manufacturers two weeks ago. Some progress is reported to have been made in adjusting the trouble with the Coke men, and a complete settlement is believed to be an event likely to occur within the next month. The heavy demand of the past week has had its effect upon the stock piles, and buyers seem to be looking after something besides their immediate wants. Anything like the actual figures obtained where sales have been made are difficult to determine, although the following are nominally the quotations:

Nos. 1 to 6 Lake Superior Charcoal	$20.00 @ $21.00
Nos. 1, 2 and 3 Bessemer, per ton	16.30 @ 16.80
No. 1 Strong Foundry, per ton	16.80 @ 17.80
No. 2 Strong Foundry, per ton	15.80 @ 16.80
No. 1 American Scotch, per ton	17.30 @ 17.80
No. 2 American Scotch, per ton	16.30 @ 16.80
No. 1 Soft Silvery, per ton	17.00 @ 18.00
Mahoning and Shenango Valley Neutral Mill Irons, per ton	14.80 @ 15.30
Mahoning and Shenango Valley Red Short Mills, per ton	15.30 @ 15.80

Old Rails.—The market is a trifle more active. Sales of small lots of Old Americans are reported to have occurred at $26 ℔ ton.

Nails.—The market continues to improve in strength, although but $2.25 is asked for Steel Wire and $1.80 for Steel Nails, 2 % off, 60 days. Cut Steel Spikes are firmer at $2.05 ℔ keg.

Scrap.—Prices are still quite weak. No. 1 Railroad Wrought is selling for $20 ℔ ton; Cast Scrap $14, and Wrought Turnings $13.50 @ $14.

The Otis Steel Company resumed operations to-day with a new force of men after two months of idleness.

Pittsburgh.

Office of *The Iron Age*, Hamilton Building,
PITTSBURGH, January 27, 1891.

Pig Iron.—Thus far the shutting down of so many of the valley furnaces has had but little effect upon prices ; in fact, they are lower than before. The trouble comes from furnacemen whose straightened financial circumstances forces them to sell at the best price they could obtain. There is a good deal of Iron in first hands in the valley districts, but as a rule it is in the hands of those who are able to hold for a better market ; some of the valley furnacemen are holding their Iron from $1.50 to $2 ℔ ton above present prices. There is reason to believe that a consumption is increasing, and just as soon as consumers become satisfied that the market has reached the lowest point they will buy more freely. The probability is that in their anxiety to get in on the bottom price some of them will hold off too long, as they frequently do, until after the turning point has been reached. We quote prices as follows:

Neutral Gray Forge	$14.00 @ $14.25,	cash.
Ali-Ore Mill	14.75 @ 15.25,	"
White and Mottled	13.50 @ 13.75,	"
No. 1 Foundry	15.75 @ 16.00,	"
No. 2 Foundry	15.00 @ 15.25,	"
No. 3 Foundry	14.50 @ 14.75,	"
No. 1 Charcoal Foundry	23.50 @ 24.00,	"
No. 2 Charcoal Foundry	21.50 @ 22.00,	"
Bessemer Iron	15.75 @ 16.00,	"

The only sales of Bessemer reported were at $16, which may be regarded as the ruling price. Some furnacemen are asking a good deal more, but, of course, are making no sales. The daily papers here and elsewhere continue to have a good deal to say in regard to Southern Iron competing with Northern Iron in Northern markets, and the inference from some of these articles is that the former is liable to supplant the latter in this and other markets. There is some Southern Iron being used here, and a cargo of some 2000 tons is now on the way to Wheeling from Sheffield, Ala., but all there is of it does not amount to a drop in the bucket. It is a

matter of no consequence to consumers where the Iron is made so long as it suits them. Some of the Southern Irons used here have given very good satisfaction, and the probability is that those who have been using it will want more of the same kind. It is quality and price that consumers look to.

Muck Bars.—The demand continues light, but there is not much offering, and prices do not go off as much as would naturally be expected under the circum stances. We quote at $27.50 @ $28.50, with sales reported by a city mill at $29 for immediate delivery. However, it ap pears that a good many of the mills making Muck for sale are sold ahead, and others again do not seem disposed to accept present prices.

Manganese.—There has been increased activity the past week, but no change in prices; 80 % domestic may be quoted at $63 @ $64, with a sale of 500 tons reported. Some consumers are disposed to anticipate future wants, from which it is evident that they do not look for prices to go much, if any, lower.

Manufactured Iron.—There is an increasing inquiry, and it is expected that considerable new business will be placed here before long. As it is, the mills generally appear to be pretty fully employed, and yet the spring trade has not fairly opened up. Prices are easy, in sympathy with raw material, and for desirable orders it is possible our quotations would be shaded. Bars, 1.70¢ @ 1.85¢; Tank and Plates, 2.10¢ @ 2.20¢; No. 24 Sheet, 2.75¢ @ 2.85¢; Grooved Skelp, 1.75¢ @ 1.80¢; Sheared Skelp, 2.5¢ @ 2.10¢—all 60 days, 2 % off for cash.

Nails.—There is no change to note in the position of the Cut-Nail market. A fair business is reported, but prices continue unsatisfactory to makers, who aver that it is difficult to get a new dollar for an old one. We continue to quote at $1.55 @ $1.60 rates for large lots of desirable specifications, 60 days, 2 % off for cash. It appears that a good many small jobbers who see these low quotations in *The Iron Age*, think they should be able to buy a carload or even less at quotations which apply to large blocks of 10,000 to 20,000 kegs. Thus large buyers are always able to do better than the small Hardware man, who perhaps never buys more than a carload at a time. Wire Nails are more active and higher, and we now quote at $2.10, 60 days, 2 % off for cash in large lots.

Wrought-Iron Pipe.—There is a continued degree of activity, although the mills are not running as strong as they did some time ago, nor is it to be expected at this season of the year; but for old contracts there would be very little doing. No change in prices. Discounts on Black Butt Pipe, 47½ %; on Galvanized do., 40 %; on Black Lap Pipe, 60 %; on Galvanized do., 47½ %.; Boiler Tubes, 1¾ inches and smaller sizes, 45 %; 2 inches and larger, 50 %; Casing, all sizes, 50 %.

Barbed Wire. — Painted $2.60 @ $2.70; Galvanized do. $3.10 @ $3.25.

Old Rails.—There has been nothing done in Old Iron Rails the past week, and in the absence of sales we quote, nominally, at $25 @ $25.50. There has been some inquiry for Old Steel Rails, and for these the market is firm; may be quoted at $16 @ $17 for short pieces.

Billets and Slabs.—We have to report a continued firm market for Billets, and prices are steady at $26 @ $26.50, cash, at maker's mill. It is worthy of mention that buyers who contracted some time ago were anxious to have deliveries held back as long as possible, but are now anxious to get their Billets as soon as the maker can deliver the same, which indicates an improvement in Steel products. There does not appear to be much inquiry for Nail Slabs, but they, too, are firmer.

Wire Rods.—There appears to be no abatement in the demand, and, with very few sellers, prices have further advanced. Sales have been made within the past week at $38, and we now quote at $38 @ $39, cash, at maker's mill, according to order and delivery. We are advised of an order for 3000 tons having been on this market within the past few days.

Merchant Steel.—There is a continued demand, but there has been no recent change in prices.

Steel Plates.—There is nothing new to report; business fair, prices unchanged. Fire Box, 4¢ @ 4.50¢; Flange, 2.80¢ @ 2.90¢; Shell, 2.60¢ @ 2.70¢; Tank, 2.25¢ @ 2.35¢.

Structural Iron.—There is considerable inquiry, which, it is expected, will result in considerable business being placed here before long. Prices remain unchanged. Beams and Channels, 3.10¢; Angles, 2.15¢ @ 2.25¢; Steel Bridge Plates, 2.25¢ @ 2.45¢.

Railway-Track Supplies.—There is a fair business. Prices remain unchanged. Spikes, either Iron or Steel, 2.10¢, 30 days, f.o.b. at makers' works; Iron Splice Bars, 1.90¢ @ 2¢; Steel Splice Bars, 1.90¢; Track Bolts, 2.80¢ with Square and 2.90¢ with Hexagon Nuts.

Steel Rails.—There has been but little new business placed here recently, but more inquiry is reported, which it is expected will lead to something soon.

Old Material.—There is nothing new to note ; demand fair; prices unchanged : No. 1 Railroad Wrougnt Scrap, $20, net ton; Old Iron Axles, $27 @ $28 ; Cast Scrap, $14.50, gross; Old Car Wheels, $17, gross. Sales Steel Rail and Bloom Ends at $17 @ $17.50, gross.

Connellsville Coke.—Business is still reported dull, owing to the blowing out of so many furnaces, but prices remain unchanged, as follows: Furnace Coke, at ovens, $1.90; Foundry Coke, $2.30; Crushed Coke, $2.65.

(*By Telegraph.*)

Pig Iron continues weak. A city furnace is reported as having sold 2000 tons Neutral Gray Forge at $14, cash. Eastern Virginia Mottled Iron is said to have been sold at Wheeling, W. Va. Steel Billets and Wire Rods continue in demand both for present and future delivery.

Detroit.

William F. Jarvis & Co., Detroit, Mich., writing under date January 26, say : There has been very little change in the market during the week. Consumers are still pursuing the same waiting policy that they have been for the past two months. Orders for small lots are coming in and prompt delivery is desired, thus showing light stocks on hand. Lake Superior Charcoal is a little more in demand, but the market for all grades continues dull and prices weak. We make a few changes in our quotations, and report prices ruling as follows:

Lake Superior Charcoal, all numbers	$19.00 @ $19.50
Lake Superior Coke, Bessemer	18.00 @ 18.50
Katahdin (Maine Charcoal)	23.00 @ 24.00
Lake Superior Coke Foundry, all ore	18.00 @ 18.50
Ohio Blackband (40 per cent.)	18.00 @ 18.50
Southern No. 1	15.75 @ 16.25
Southern Gray Forge	14.00 @ 14.50
Jackson County (Ohio) Silvery,	18.25 @ 18.75
Connellsville Coke	4.65

Parties from Ohio are reported to have purchased and will operate iron and coal mines formerly owned by the Consolidated Coal and Iron Company.

Metal Market.

Copper.—From second hands there have been sales of 100,000 lb or more of Lake Superior Ingot at 14¾¢. On the Metal Exchange small quantities were offered at 14.60¢ for January, 14½¢ for February and 14.65¢ for March delivery. The large mining companies are still quoting at 15¢, however, and fair quantities of Cakes and Bars for electrical purposes are selling at that price. So far as can be learned the purchases of Ingot are running light, and it is understood that most contracts with the producers guarantee the buyers protection against any considerable decline from the nominal prices. In the cheaper varieties of Copper there is a very fair trade passing, but prices show the irregularity that has existed for some little time past. Thus, while 13¢ is generally asked for Arizona Ingot, sales are said to be making at ¼¢ @ ¼¢ less in some instances and casting stock sells at 11½ @ 12¢, according to brand.

Pig Tin. — Speculative transactions have been on a small scale in the absence of incentive to action. Apart from sales at 20.30¢ for May delivery, against purchases of prompt shipment at 20.15¢, the deals were few and far between. Following in the wake of the London movement, prices have averaged somewhat lower here, and the market looks rather weak as well as dull at the moment. On jobbing account and for consumption there is about the usual movement, but the distribution in this way is at prices remarkably close to those quoted on 10-ton lots. Ordinary jobbing quantities were quoted Wednesday at 20¼¢ @ 20½¢, as to terms and size of lot. Ten-ton lots for prompt delivery were about 20.10¢, net cash. Futures were quoted at 20¢ bid, 20.10¢ asked, for February; 20.10¢ bid, 20.25¢ asked, for March; 20.10¢ bid, 20.30¢ asked, for April delivery. On the Exchange 10 tons were sold at 20¢ for January delivery.

Pig Lead.—Prices have moved a fraction lower during the week, and the market has been quiet. The reduced cost, apparently, is no incentive to consumers at the moment, and evidence is wanting of confidence on the part of other buyers. The sales for the trade do not exceed 300 tons, and the majority were at 4.35¢ for carload lots. At this writing 4.35¢ @ 4.40¢ is asked for single carloads, but round lots for delivery some little time ago could doubtless be secured at a fraction less.

Spelter.—Of prime Western the offerings have again been free, and slightly lower prices are quoted on both prompt and future shipments. The former may be obtained at 5.35¢ in carload lots, while 5.20¢, if indeed not a lower rate, would secure late February and March shipments. The demand at present is moderate.

Antimony.—In a jobbing way there is about the usual movement. Prices stand at 16¼¢ for Hallett's, 16¼¢ @ 16¾¢ for L.X. and 18¼¢ @ 19¢ for Cookson's.

Tin Plate.—In Coke finish Plates there has been a large movement for future delivery, including shipments as far ahead as the latter part of May. Terne Plates have received more attention, also, but Charcoals are taken in a moderate way only. Prices are strong all along the line. Spot business has been somewhat larger the past week, yet small in comparison with the dealings in futures. Quotations for large lots on the spot are as follows: Coke Tins—Penlan grade, IC, 14 x 20, $5.45 @ $5.50; J.B. grade, do., $5.55. Bessemer do., $5.45 @ $5.50; Siemens Steel, $5.60. Stamping Plates—Bessemer Steel, Coke finish, IC basis, $5.55 @ $5.60; Siemens Steel, IC basis, $5.65 @

$5.70; IX basis, $6.65. IC Charcoals—Melyn grade, $6.25; for each additional X add $1.50; Allaway grade, $6; Grange grade, $6.12½; for each additional X add $1. Charcoal Ternes—Worcester, 14 x 20, $5.65; 20 x 28, $11; M. F., 14 x 20, $7.75; do., 20 x 28, $16; Dean, 14 x 20, $5.25; do., 20 x 28, $10.50; D. R. D. grade, 14 x 20, $4.90; do., 20 x 28, $10; Mansel, 14 x 20, $5; do., 20 x 28, $10; Alyn, 14 x 20, $5; do., 20 x 28, $10.25; Dyffryn, 14 x 20, scarce; do., 20 x 28, $10.50. Wasters—S. T. P. grade, 14 x 20, $4.75; do., 20 x 28, $9.62½; Abercarne grade, 14 x 20, $4.70; do., 20 x 28, $9.50.

New York Metal Exchange.

The following sales are reported:

MONDAY, January 26.

25 tons Tin, April ..... 20.30¢
100 tons Iron, March $15.25

TUESDAY, January 27.

40 tons Tin, May ..... 20.30¢

Imports.

Hardware, Machinery, &c.

Aich, Herman, Ironware, cs., 99; Hdw., cs., 75
Andreas & Co., Mach'y, case, 1
Barbour Bros. & Co., Mach'y, cs., 32
Beach & Co., Mach'y, cs., 2
Botany Worsted Co., Mach'y, pgs., 15
Bloomfield, J. C. & Co., Mach'y, pgs., 12
Downing, R. F. & Co., Mach'y, cs., 350.
Electric Cutlery Company, Cutlery, cs., 1
Godfrey, Chas. J., Arms, case, 1
Henderson Bros., Nails, kegs, 30
King, Hezekiah, Hdw., cs., 23
Newton & Shipman, Files, cks., 4
Rotterdam S. S. Co., Arms, cs., 55
Sheldon, G. W. & Co., Guns, cs., 9
Steel Bros. & Co., Hdw., cs., 2
Sumner, C. P. & Co., Mach'y, pgs., 15
Taylor, Thos., Mdse, case, 1
Ward, Jas. E., Hdw., case, 1

British Iron and Metal Markets.

[*Special Cable Dispatch to The Iron Age.*]

LONDON, WEDNESDAY, January 28, 1891.

The Pig-Iron warrant market has been flat, and prices have varied but little. Late sales were at 47/2 @ 47/5 for Scotch, 42/ @ 42/1½ for Cleveland and 52/9 @ 53/ for Hematite. There is a complete absence of fresh interest in the market and purchases are small. Holders of warrants are very confident of higher prices, owing to increasing scarcity due to steady depletion of stocks in Connal's stores and exceedingly light supply in makers' hands. Of Scotch there is scarcely anything on hand, save that in the public stores, and the stock there has decreased 4286 tons during the week. Cleveland ironmasters are demanding a further reduction in wages, owing to the poor condition of trade. Several Hematite furnaces are damping, owing to unremunerative prices, dear fuel and high cost of labor.

Efforts are making to form a syndicate to control the Staffordshire Sheet-Iron trade. In the negotiations about 100 mills were represented.

Holders of Old Iron Rails have made a further slight reduction in prices with a view to stimulating action on the part of buyers, but offers of Double Heads at 62/6 fail to be attractive.

For Tin Plates there continues to be a strong demand, and large orders resulting from recent inquiries have been placed. The business is still chiefly in Bessemer Cokes. Terne Plates have received some attention, but Charcoals are neglected. Merchants express an eager desire to have supplies ready for delivery in the States before July, and it is probable that the demand will slacken off in May, if not before.

Block Tin, after reaching £91. 15/, has steadily receded and dropped to £90. 15/. Consumption is large, but speculative interest in the market is spiritless, which fact, coupled with plentiful supplies from the Straits, is held accountable for the decline.

Early in the week a large business was done in Copper Warrants at about £53. 5/ for prompts, and quantities then offered were eagerly bought. During the past few days the market has been inactive. Sellers are reserved, and buyers refuse to pay an advance. The consumption, however, is undoubtedly improving, and cash warrants are not as plentiful as they were early in the month.

Scotch Pig Iron.—Offerings are still light. Demand moderate, but prices higher for the few brands in the market.

No. 1 Coltness,	f.o.b. Glasgow	.....	..
No. 1 Summerlee,	"	"	....
No. 1 Gartsherrie,	"	"	....
No. 1 Langloan,	"	"	....
No. 1 Carnbroe,	"	"	..... 52/6
No. 1 Shotts,	"	at Leith	....
No. 1 Glengarnock,	"	Ardrossan	....
No. 1 Dalmellington,	"	"	..... 59/6
No. 1 Eglinton,	"	"	..... 51/

Steamer freights, Glasgow to New York. 2/: Liverpool to New York, 10/.

Cleveland Pig.—Rather more business the past week, and prices a shade firmer. Makers quote at 42/6 for No. 3 Middlesborough, f.o.b.

Bessemer Pig.—The demand is still moderate and prices are a shade easier. Makers quote 53/6 for West Coast brands, Nos. 1, 2 and 3, f.o.b. shipping port.

Spiegeleisen.—Sales have fallen off, but makers hold firmly at old prices. English 20 % quoted at 97/6, f.o.b. shipping port.

Steel Rails.—There is little doing and prices are without change. Heavy sections quoted at £4. 17/6 and light sections £5. 17/6 @ £6, f.o.b. at N. W. England shipping point.

Steel Blooms.—Demand is light and prices are in buyers' favor. Makers quote at £4. 12/6 for 7 x 7, f.o.b. at N. W. England shipping point.

Steel Billets.—No change the past week; sales moderate and demand slow. Bessemer, 2½ x 2½ inches, £4. 17/6, f.o.b. at N. W. England shipping point.

Steel Slabs.—The market remains very quiet, and prices are without change. Bessemer quoted at £4. 17/6, f.o.b. at N. W. England shipping point.

Old Iron Rails.—No improvement in the demand. Prices still rather weak. Tees quoted at £3 @ £3. 2/6 and Double Heads £3. 2/6 @ £3. 5/, f.o.b.

Scrap Iron.—The market dull and unchanged. Heavy Wrought quoted at £2. 5/ @ £2. 7/6, f.o.b.

Crop Ends.—Small demand and prices nominal. Bessemer held at £3 @ £3. 2/6, f.o.b.

Manufactured Iron.—Business slow and prices in buyers' favor. We quote, f.o.b. Liverpool:

	£ s. d.		£ s. d.
Staff. Marked Bars		@	8 10 0
" Common "		@	6 10 0
Staff. Bl'k Sheet, singles...		@	7 2 6
Welsh Bars (f.o.b. Wales)...	5 17 6	@	6 0 0

Copper.—The market firm but rather quiet. Merchant Bars quoted at £53. 5/, spot, and £53. 15/, three months futures. Best Selected, £59.

Tin.—Very little doing and prices barely steady. Straits quoted at £90. 15/, spot, and £91. 5/ for three months' futures.

Lead.—A moderate trade passing. Little change in prices. Sellers at £12. 12/ 6 quoted for Soft Spanish.

Spelter.—Prices a shade firmer and the demand fair. Sellers hold at £23. 5/ @ £23 10/ for Ordinary Silesian.

Tin Plate.—The demand still active and the market strong at the advanced prices. We quote, f.o.b. Liverpool:

IC Charcoal, Alloway grade..... 19/3 @ 19/6
IC Bessemer Steel, Coke finish.... 18/ @ 18.6
IC Siemens " " " ... . 18.3 @ 18/9
IC Coke, B. V. grade..... 17/9 @ 18/
Charcoal Terne, Dean grade.... ..... 17/6 @ 17/9

New York.

Office of *The Iron Age*, 96-102 Reade street,
NEW YORK, January 28, 1891.

American Pig.—The market is irregular and there is considerable pressure to sell from different quarters. Southern warrant Iron is being offered at prices equivalent to $14.50 for No. 2 Foundry, $14 for No. 3, and standard Lehigh Valley No. 2 Foundry warrants are offered at $15.25, tidewater. Efforts are being also made to place Hocking Valley brands at low prices and New York State Irons are seeking a market here. Virginia Forge is selling in the immediate vicinity of Eastern Pennsylvania furnaces, and we understand that the Pennsylvania Railroad will at an early date announce the abandonment if its policy of protecting its Central and Eastern Pennsylvania Iron makers by the arbitrary against the Southern roads, on the ground that the latter threaten to retaliate on Pennsylvania finished product, which is going South in large quantities. Nothing definite has yet come out of the movement to bank among the Eastern Pennsylvania furnacemen. We quote Northern No. 1 Foundry $16.75 @ $17.50, No. 2 $15.75 @ $16.50, Forge $14.50 @ $15, tidewater, and Southern Iron $15.50 @ $16 for No. 2, with low offerings No. 1 Soft.

Spiegeleisen and Ferromanganese.—Small lots of Spiegeleisen for shipment have been placed lately at $29.50 @ $29.75. In Ferromanganese the Western market has been captured completely by the Pittsburgh maker. Sales must have aggregated at least 1500 tons during the past few weeks, including one lot of 600 tons for a large Pittsburgh steel works. In this market one large firm of importers have purchased one lot of 200 tons in store. It is believed that now nearly all of the cheap speculative lots have been cleared away, so that actual cost of importation may once again become the ruling factor in determining prices. We quote $61.50 @ $62.

Billets and Rods.—There has been a nominal advance in Pittsburgh, and yet prices in that district are still low enough to take any important business in the East. Rods are quiet at $38.50 at Eastern sellers' mill. The new Newburg mill is expected to be in the market soon as a seller.

Steel Rails.—The only transaction of any consequence closed by Eastern mills has been the sale of a lot of 2500 tons to the Central Railroad of Georgia. There are only few and relatively unimportant negotiations pending. The railroads are unquestionably holding off to test the strength of the mills, who are in the East asking $30 at works, or $30.75 at tidewater.

Track Fastenings.—The market is irregular and low. A round lot of Fish Plates for a New England road was placed lately at about 1.75¢, delivered. Spikes are nominally $1.95 @ $2, and Bolts 2.75¢ @ 3¢.

Manufactured Iron and Steel.—The Astor contract is not yet closed, but it is expected that it will be placed in a day or two. The market in Structural and Bridge work has been very seriously disturbed of late by the low prices which have been made by a newcomer in the field, a large works in Central Pennsylvania. Practically all the work of any consequence during the past two weeks has been captured, including about 1000 tons of elevated structure for this city. Plates have been very weak lately, although some relief has came through the securing of Western orders by Eastern mills, the first time in a long time that the usual current has been reversed. We quote Angles, 2¢ @ 2.10¢; Sheared Plates, 2.10¢ @ 2.25¢; Tees, 2.5¢ @ 2.75¢, and Beams and Channels, 3.1¢, on dock. Steel Plates are 2.10¢ @ 2.30¢ for Tank, 2.4¢ @ 2.6¢ for Shell, and 2.6¢ @ 3¢ for Flange, on dock. Bars are 1.7¢ @ 1.9¢, on dock.

Old Material.—The only sale reported is a lot of 300 tons in the interior at a price equivalent to $22 on cars Jersey City.

Warrant Stocks.—The American Pig-Iron Storage Warrant Company report as follows:

	Tons.
Stock in yard, January 21, 1891	63,200
Put in yard for six days ending January 27, 1891	1,000
Total	64,200
Withdrawn six days ending January 27, 1891	2,100
Net stock in yard, January 27, 1891	62,100

A disastrous explosion occurred Tuesday at Mammoth Mines No. 1 of the H. C. Frick Coke Company, in the Connellsville coke region. It is estimated that fully 110 men lost their lives. Thus far 65 bodies have been recovered. The disaster is the greatest that has ever occurred in the Connellsville coke region. The cause of the explosion is unknown. The mine has been in operation for five years, and has been almost entirely free from accidents of any kind.

Erastus Wiman, the zealous advocate of reciprocity with Canada, is popularly supposed to be conversant with that subject and to know something about commercial relations. In a speech delivered in Boston last week he said: "The Canadian people, especially the great majority, comprising the farmers, miners, lumbermen, fishermen and shippers, are eager for an unrestrained trade with this country, and it needs only the passage of the Hitt-Sherman resolution through Congress, and firmness on the part of Mr. Blaine not to be tempted by any partial offers, to result in a victory at the next general election in Canada which shall forever open the greater half of the continent to the trade of this country, and beget supplies of free raw material and cheapened food products that will do more to prepare New England for both internal and foreign trade than any other event that could happen."

Correspondence.

The Direct Process.

To the Editor: In your issue of January 22, page 141, I notice an article describing a new direct process for the manufacture of iron and steel, recently patented by Messrs. Lash and Johnson of Pittsburgh. These questions of improvement in the manufacture of iron and steel are most interesting, and, of late, since the remarkable results shown during the past year by the Adams process, both as regards high quality and cheapness in production of open-hearth steel, the development of direct processes in steel manufacture has attracted especial attention and revived the interest in this particular branch of the business. It had for a number of years fallen into disrepute because of the failure of such elaborate and thorough attempts as were made by Siemens, Blair and others; but the process referred to in your last issue is simply a rehashing of an old affair. In 1882 Mr. Chas. Adams did this very same thing at Glenwood. There he ground the ore and carbonaceous reducing agent and mixed with them a sufficient amount of soluble glass, or silicate of soda, or "other suitable fluxes," to form a pasty mass, "or a quantity of slag may be melted and the charge of ore put into it, to protect it from the action of the flame." This charge was worked in precisely the manner described in the Lash-Johnson process, and (quoting again from the descriptions of Adams' method, in his American and Canadian patents and the newspapers) "heats have been made from cold ore in less than an hour, and the iron has come to nature in less than 30 minutes." So it is evident that Adams, in 1882, had brought the same method to a much higher state of development than Lash and Johnson have succeeded in doing in 1890; for they announce, in the article to which this refers, that "a charge of the material, treated as hereinbefore stated, can be brought to a liquid condition in a suitable open-hearth furnace—as, for example, one of the Lash type—in four or five hours!"

Again, "An elimination of the phosphorus and other deleterious substances in the gangue of the ore can be effected by this process by tapping or skimming off as soon as the slag becomes sufficiently fluid and before the bath is raised to a temperature at which the phosphorus and metallic iron combine; the phosphorus remaining in the slag as phosphoric acid is removed therewith." Precisely the same thing was done, and described by Adams in 1882, and is being done every day at the present time in his present method.

Again, "The inventors state that by this process any desired carbon, in any or all heats, may be obtained by adding ore to the bath when it is desired to reduce the carbon, or by adding further amounts of the amalgam, prepared with a higher percentage of carbon, where it is desired to increase the carbon in the bath." As is well known by all who investigated the process, Blair did this from 1871 to 1878, and described and published it, and it has been completely described by such eminent authority as Sir Lowthian Bell and by Henry M. Howe, pages 278 to 281 of the latter's book, "The Metallurgy of Steel," being devoted to a description of the Blair process, from which I quote: "Believing sponge cheaper than cast iron, Blair would lessen the proportion of cast iron to sponge used in the open-hearth process by carburizing part of the sponge, either by inclosing charcoal or tar in the blooms, perhaps together with some accelerating (*e. g.*, cyanogen-yielding) matter, or by passing through the reducing retort gaseous hydrocarbons, which, he says, would carburize the sponge."

Quoting again from Howe, page 283, paragraph 339 C., "Gerhardt bricked ore, flux and carbonaceous deoxidizing matter with tar, heated these bricks in a puddling furnace, and there balled the resulting iron."

In other words, there is not a single feature in this Lash-Johnson process, as described in your last issue, which has not long ago been worked out to a much higher state of perfection than they have it, and published throughout the United States, Great Britain and the Continent.

If any one cares to inform himself further as to the Adams process as it was operated in 1882, let him refer to Howe's "Metallurgy of Steel," and at the bottom of page 283, beginning with paragraph 340, he will find a description of the Eames process, taken from papers in the "Transactions" of the American Iron and Steel Institute, 1888, *The Iron Age*, 1888, and the United States patents taken out in 1885 and 1889. This is a perfect description, so far as it goes, of Adams' process as it existed in 1882, with the exception of the tables of costs and number of furnaces. Adams abandoned this method, not because it did not work, but because it was too costly.

Yours very truly,
THOS. S. BLAIR, JR.

PITTSBURGH, Pa., January 26, 1891.

The comparative rate of wages paid now and a year ago is shown in a tabulated statement in the *Real Estate Record and Guide*, also the comparative cost of building materials. On January 1 masons were paid $5 a day, or 75 cents to $1 more than a year ago, and stone cutters earn $3.50 and $4.50 a day, against $3.50 and $4 a day a year ago. Plasterers, carpenters, plumbers, painters and ordinary laborers receive the same wages they did in January, 1890. Bricks are selling 25 cents to $2 a thousand less than they were a year ago. Eastern lime is selling 10 and 20 cents cheaper per barrel than a year ago. Lumber is also cheaper. The wholesale rate of Eastern spruce is $1 to $2 per thousand less than a year ago; of white pine, $1 to $2, and of yellow pine, $1 to $1.50. Nails are worth 20 to 25 cents less than they were a year ago. White and blue lump plaster is selling 25 cents per ton less, but ordinary calcined city is 10 to 15 cents higher. Roofing slate has not changed in price. Cement is slightly lower for one grade, slightly higher for two, and unchanged for two. Fire brick is $1.50 to $2 per thousand higher. Plasterers' hair is 2 cents per bushel cheaper.

An exchange states that the American Fire Proof Steel Car Company have began the erection of a small temporary plant in Chicago, where they can turn out a limited number of cars until the Columbia Company complete their permanent plant and are ready to build cars. They expect to have steam up within 30 days. Several companies, all working under the parent organization, are about getting under way. The Bridgeport Fire Proof Steel Car Company of Bridgeport, Ala., are undergoing a complete reorganization. Their capacity is 15 freight cars per day, and two passenger or mail coaches per week. They will be in full working order within 60 days. The Virginia Fire Proof Steel Car Company have let the contracts, are pushing their work, and soon expect to be able to turn out cars. The Columbia is the name of the Chicago company. Their capacity will be about 12 to 18 freight cars per day, and two postals or passengers. The present company expect to have five good plants in full operation by the middle of next summer.

A company are being organized to establish machine works at Daytona, Fla.

HARDWARE.

Condition of Trade.

THERE ARE increasing signs of a satisfactory opening of spring business, and a good many orders are coming in from travelers. There is a general feeling that the amount of business will be large, and while the tone of the market is not strong the improvement which is noted in some staple lines has a good effect. Reports from many parts of the country show that retailers are doing an excellent business, and the prevalence of snow and winter weather has a stimulating effect upon trade. Collections are much better than they were a few weeks ago, and a restoration of confidence in financial circles has a reasuring effect upon mercantile affairs.

St. Louis.

(*By Telegraph.*)

The improvement in Hardware noted in our last report continues. The demand for Shelf Hardware is increasing, and from some sections heavy orders are received for Building Tools. Cut Nails are a trifle firmer, but as yet the demand has not assumed any large proportions. Wire Nails, however, are in urgent demand, and are firmly quoted at from $2.35 to $2.40 from store. The consolidation scheme which has for its primary object the purchase of Washburn & Moen patents appears to have been consummated at the meeting of the manufacturers held in Chicago Monday, January 26. It is more than likely the effect of this consolidation will shortly be seen in the price of Barb Wire, which undoubtedly will be advanced, as mills claim that at present prices there is not sufficient profit to compensate them for the time, labor and capital employed in its manufacture. We quote today 2.85 cents for lots from store. Carload lots are quoted at 5 cents per hundredweight less than the above figure. Copper Goods are somewhat irregular and weak.

Chicago.

(*By Telegraph.*)

Hardware jobbers report a continuance of good trade. Orders are now being taken for season goods, such as Wire Cloth, Steel Tools, Garden Implements, &c., to be delivered later, but there is a heavy demand for General Hardware, including Building Supplies and other small articles which run values up rapidly. The trade in Tin Plates is very active and prices are firm, with an upward tendency. Wire Cloth is now down to $1.40 pretty regularly. Heavy Hardware trade has never been better in January than now; Wagon Woodwork is still growing scarcer and dearer. Manufacturers of hickory bent stuff can now name almost their own figures for carloads.

Notes on Prices.

Cut Nails.—Some business has been doing in Cut Nails and prices are perhaps a shade firmer than at our last review. Some of the mills are curtailing their production and nearly all are refusing to make concessions in prices. Quotations, in round lots, at mill are on a basis of $1.60, with usual average, a price which is shaded only in exceptional cases. Quotations in New York market are still $1.80, f.o.b. New York, for carloads of Iron or Steel Nails, small parcels from store being $1.85 to $1.90 for Iron, with about 10 cents advance for Steel.

Chicago, by Telegraph.—Steel Nails have been in better demand from the manufacturers, and several large transactions are reported. Wheeling makers quote $1.60 at mill for 30 cent average, but this price is shaded by some. The Lakeside Nail Company shut down Saturday to rebuild foundations under plate-mill engine, which will take six weeks or more. This should help the Steel-Nail market, as the company have latterly turned out about 1000 kegs daily, and marketed them as fast as they were cut. Jobbers report the Cut-Nail trade quiet with them, and continue to quote $1.85 from store and $1.80 in carloads.

Wire Nails.—The manufacturers still continue to quote the figures named in last week's report, $2.15 being a general price made by leading mills on carload lots at factory. While this price is shaded in some exceptional instances, there are manufacturers who refuse to meet it and name $2.20 to $2.25. The demand continues large and the mills generally are full of orders. Small lots from store in New York are quoted at $2.45 to $2.50.

Chicago, by Telegraph.—The slight increase in prices of Wire Nails quickened trade very much, and for a few days the jobbers have been shipping the goods in immense quantities, rivaling the operations of factories. A new regulation goes into effect Monday on Western railroads, by which Wire Nails and Barb Wire can no longer be shipped in mixed carloads at commodity rates. This also has its effect on this week's trade, making small dealers hurry in their orders.

Barb Wire.—The market is somewhat firmer than it has been, and manufacturers quote in round lots at mill 3.10 cents for Galvanized four point. The demand is fair. Small lots in New York sell at 3.35 cents to 3.40 cents.

Chicago, by Telegraph.—Barb-Wire trade is heavy with all classes of buyers. Manufacturers report specifications coming in faster than they can take care of them. Prices are quite firm now at about the rates named by jobbers, which are 2.75 cents for Painted and 3.30 cents for Galvanized with 5 cents per hundred off for carloards.

Shot.—A change has been made by the associated Shot manufacturers in the price of Shot, and also in the form in which quotations are issued. Prices are now made on ton lots, 5 cents per bag being added on any quantities less than ton lots. The new prices went into effect January 24 and are as follows on ton lots or over; terms, net 30 days or 2 per cent. discount for cash in ten days, freight equalized with any manufacturing point:

Drop Shot up to BB, 25-pound bag	$1.32
" " 5-pound bag	.35
" BB and larger, 25-pound bag	1.57
" " 5-pound bag	.40
Buck and Chilled, 25-pound bag	1.57
" 5-pound bag	.45
Dust Shot, 25-pound bag	2.00
" 5-pound bag	.45

Hollow Ware.—A reduction of about 10 per cent. has been made in the prices of Stove Hollow Ware, ground and unground, White Enameled and Tinned Ware. The lower prices are the result of active competition.

Strap and T Hinges.—The manufacturers of Strap and T Hinges have reached an understanding in regard to prices, and have agreed upon an extreme discount which is a slight advance on figures at which the goods have recently been selling.

Nuts.—The manufacturers of Nuts have made a reduction of 15 cents per 100 pounds on both Hot Pressed and Cold Punched The market in this line is regarded as in excellent condition, with prospect of good business.

Stocks and Dies.—There is no change in the prices of these goods, but the tendency seems to be toward somewhat lower prices.

Wrought-Iron Goods.—The market is somewhat uneven, exceptionally low prices being made by one or two manufacturers, which the others, however, refuse to meet. In general terms this line of goods may be referred to somewhat lower in price than a few weeks ago.

Keys.—The leading manufacturers of Cabinet and Trunk Keys have formed a combination and have decided upon revised prices. Outstanding quotations are accordingly withdrawn. The new prices are on a basis of discount 33⅓ per cent. to the general trade. The former method of giving rebates has been abandoned.

Lawn Mowers.—The season opens with an excellent prospect for a large business. The jobbers have placed heavy orders. Prices are not materially different from last season, but are slightly lower, and there is a wide difference between the prices at which the leading and best-known machines are sold and those which prevail on the newer and cheaper grades.

Picks and Mattocks.—The market remains without important change, the goods selling at prices which are referred to as low and unprofitably near the cost of production.

Horse Nails.—The Horse Nail market is characterized by a steady and even tone,

and prices are referred to as pretty well maintained. W. M. Mooney & Co., Ausable Chasm, N. Y., announce slightly higher prices on their Maud S Nails, the discount on which is now 40 and 10 per cent. This advance is referred to as necessary on account of the very narrow margin of profit at recent prices.

Glass.—The Glass situation shows no change since our last report. Prices continue low, with a marked desire, in some instances, on the part of manufacturers to dispose of accumulated stocks, without, however, deranging the market price.

The amount of Glass in the hands of jobbers, and the large amount due them from factories, bought or contracted for during the recent low prices, will probably prevent any great advance in price in the near future. Reports come to us of Glass factories closing down, in addition to the number mentioned by us last week. A restriction of the output will tend to give the Glass market a healthy tone, and will be likely to cause advances after the present stocks are exhausted. Unsettled weather is affecting the local demand.

Boiler Tubes.—The manufacturers of Boiler Tubes have recently made changes in the gauge and list price of some of the goods:

1 inch is changed from 15 to 13 wire gauge, and the list from 23 to 32 cents.
1¼-inch is changed from 15 to 13 wire gauge, and the list from 23 to 30 cents.
1⅜-inch is changed from 14 to 13 wire gauge, and the list from 28 to 27 cents.
1¾-inch the gauge remains as before (13), and the list is changed from 22 to 24 cents.

As mentioned last week the discount on all sizes of Boiler Tubes is now 50 per cent.

Miscellaneous.—N. R. Streeter & Co., Groton, N. Y., advise us that for the convenience of their customers they adopted on January 1 the Enterprise price-list on their *Sensible Sad Irons*. They also refer to the fact that these goods are fast displacing the common Sad Irons, as the price is but little higher.

Indurated Fiber Pails.—Cordley & Hayes, 173 and 175 Duane street, New York, announce January 23 a reduction of the list price on Standard Star Pails from $6 to $5.40 per dozen. They also refer to arrangements for increasing the output of their Indurated Fiber Ware as now completed, and that in February they will be able to turn out 25 per cent. more goods than in December.

Churns.—The following are the prices of McDermaid's Star Barrel Churn, manufactured by J. McDermaid, East Rockford, Ill.:

No. 0, 6-gallon	each,	$2.60
No. 1, 10 "	"	2.75
No. 2, 15 "	"	3.00
No. 3, 20 "	"	3.25

Soldering Furnaces.—The Pneumatic Soldering Furnace Company, J. Burgess & Sons, Columbus, Ohio, quote their Furnaces at the following prices:

No. 3 Gem, tin reservoir	$7.00
No. 3 Gem, copper reservoir	8.50

For plumbers' use they furnish an extra hood and pot, for which they make an extra charge of $1.

Barb-Wire Patents.

IT IS UNDERSTOOD that the negotiations with reference to the purchase by Columbia Patent Company of Barb-Wire patents from Washburn & Moen Mfg. Company are progressing satisfactorily and it is expected that the contemplated arrangements will be carried out, leaving the control of the patents with the Columbia Patent Company, and terminating existing litigation. It is thought that the matter will be definitely closed within a few days. The reports in regard to it published in the daily papers are inaccurate and misleading.

Guarantee of Prices.

QUESTIONS in regard to guarantee of prices are constantly coming up in one form or another, and we give below the views of a well-known Hardwareman on the following transaction:

Wholesale agent A ordered in May, 1889, of manufacturer B 100 cases of goods at 50 per cent. discount, order reading: "Quantity to be taken by December 31, price guaranteed against yourselves to date of shipment." During the summer the price of these goods declined to 60 off, and remained at this price until about November 1, at which time B's best price was 50 and 5 per cent. discount, that being the price prevailing to-day. A now wants the goods shipped, and claims they should be billed at 60 per cent. B claims that they should be billed at 50 and 5. Which of the two parties to the transaction is right?

1. We have an order for goods at a price not higher than 50 per cent. discount.

2. The quantity ordered "to be taken by December 31;" this implies that a whole or part may be taken before that time, that none need be taken before, but all must or shall have been taken at the expiration.

3. The price is "guaranteed against ourselves," which means that if manufacturer B sells the same kind of goods between May and December 31 at a less price than 50 per cent., then A is to have the goods he bought at same price that same kind of goods were sold to others during said interim.

The contract is somewhat ambiguous; there may have been a mental reservation; it is certain, however, a sale and purchase were intended and understood. In considing the matter we may include some abstract ideas from the contract, yet withal relevant.

A and B made a contract for the sale and purchase of merchandise. This contract includes an order for the goods at a given price, the time of payment is not spoken of; the contract does, however, include a privilege or option as to the time the goods have to be taken, and guarantees that the merchandise shall be furnished at the same price, that the same kind of goods are sold at during the life of the option. We will suppose that there were no mental reservations, and proceed to form a rule from the contract as written. Certain details were necessary to the determination of the contract, a time was alloted for the carrying out of these details, the contract could not be determined until the details were carried out. The prices for the goods were subordinate to this time. We therefore have a sale of goods to be taken at or before a stipulated time, to be settled for at the lowest price ruling, or the lowest price at which the same kind of goods were sold during the time alloted for the determination of the contract. That is the abstract rule, and in the question at hand we would advise that A would not have to take the goods until December 31, that the price he would have to pay would be 50 per cent., if that was the lowest price at which B sold the same kind of goods between May and December 31, and that though he had taken all or a part of the goods before December 31, the settlement should be at 60 per cent.

Business Changes.

THE Woodrough & Hanchett Company have been incorporated at Chicago, with a capital stock of $75,000, to deal in Hardware and act as manufacturers' agents. The incorporators are R. L. Woodrough, G. M. Hanchett and W. R. Wagner.

Harrington & Knight have commenced the Hardware business at Fargo, N. Dak., having purchased the Henderson estate stock, the business of which Mr. Harrington has conducted under the direction of Administrator Tyler since the death of Mr. Henderson three years ago. Both members of the new firm are referred to as well and favorably known in North Dakota, and are regarded as starting out under the most flattering auspices.

We are advised by William Shimer's Son & Co., Freemansburg, Pa., that they have appointed the Cline Mfg. Company, 67 West Washington street, Chicago, their sole agents, who will carry a full line of their samples, and from whom catalogues and price-lists of the goods can be had.

R. A. Messick having purchased a third interest in the firm of Thompson & Lang, Hillsboro, Texas, the title has become Thompson, Lang & Co. The firm report a very satisfactory business for 1890, the increase over the previous year being about 15 per cent. They carry a large and well-assorted stock of Hardware, Tinware, Queensware, Glassware, &c., and by courteous and fair dealing have established a large and growing trade.

About February 1 the office and repository of Geo. K. Ogler & Co., St. Louis, Mo., will be moved to 408 and 410 Elm street, opposite the Southern Hotel.

R. S. Frame has bought out the business of Frame Bros., Washington, Ohio, and will continue it under his own name. Mr. Frame began business in 1874, and until November, 1881, conducted it alone, when he associated with his brother, A. P. Frame, whose interest in the firm he recently purchased, as noted above.

It is announced January 9 that the firm of J. H. Osborne & Co., Union City, Ind., has been dissolved by mutual consent. The business of the firm will be continued by the Buckeye Mfg. Company, to which company all rights and privileges have been transferred. All accounts due the old firm are payable to the Buckeye Mfg. Company, who will assume the payment of the debts.

January 1, 1891, it is announced that the business arrangement existing between Foster, Merriam & Co. and M. B. Schenck & Co., Meriden, Conn., since April 1, 1887, has been discontinued by mutual consent. All orders for Yale and Gem Casters remaining on the books of Foster, Merriam & Co. January 1 will be filled by M. B. Schenck & Co. on terms agreed upon with their customers, and communications relating to the manufacture or sale of the goods should in future be addressed to the latter firm. All accounts prior to January 1, 1891, should be remitted to Foster, Merriam & Co.

The Pope Mfg. Company, Boston, Mass., announce that they have sold their World Typewriters to the Typewriter Improvement Company, 4 Post Office square, Boston, and transferred to that company the sole agency for the sale of these machines It is accordingly requested that all future orders for these goods be sent to

the Typewriter Improvement Company, from whom they will receive prompt attention.

The firm of Talbott & Lupton, Cincinnati, having been dissolved January 1, Henry B. Lupton has removed his office to Fosdiek Building, 59 West Fourth street, Room 8, where he will continue the agencies of Oliver & Roberts Wire Company and of Belmont Nail Company, and also do a general business in Iron and Steel products.

Trade Items.

THE NATIONAL CORDAGE COMPANY, manufacturers of Binding Twine, have opened an office corner Jackson and Sherman streets, Chicago. They state that they are the largest manufacturers of Binding Twine in the world, and are prepared to make prices that will secure desirable business and leave dealers a suitable margin of profit.

THE NATIONAL HARROW COMPANY have been formed, principal office at Utica, N. Y., with a capital paid in of $500,000, representing 19 manufacturers of Spring-Tooth Harrows. The manufacturers interested refer to the harmonizing of the Harrow interests as likely to be of great benefit to dealers and farmers buying Harrows licensed under the new company. This arrangement, it is stated, precludes the possibility of litigation, a feature which has been very objectionable in the past. All licensed Harrows will hereafter bear the official label of the National Harrow Company, which is referred to as being a complete guarantee to the dealer and farmer.

CHARLES MUNSON BELTING COMPANY, Chicago, issue an 1891 calendar. The calendar sheets attached to the bottom of the card are 8 x 10 inches, while the card above is the same size. The card represents the interior of a factory, with a quantity of Belting of various widths lying on the floor, as it is being run from the machines.

THE ORIGIN of the destructive fire which, as reported in our last issue, destroyed the Hardware establishment of Walbridge & Co., Buffalo, N. Y., is still unexplained. The fire broke out at 2 o'clock on the morning of the 18th inst. and it is believed that nobody was above the first floor after 6 o'clock the previous evening. Owing to the heavy nature of the goods carried on the upper floors they soon fell, and the walls quickly followed, so that in an hour after the outbreak of the fire the entire main building was a mass of ruins. The annex building which was very substantially built and five stories in hight, stood the heat for some time after the fall of the main building, but subsequently caught and was greatly damaged. The firm advise us that during the 20 years they have been in business they have pursued the policy of carrying a full line of insurance, estimating the value of their stock from their merchandise balance on the first of each month and adjusting the amount of insurance accordingly. The books and papers of the firm were all saved, although they were badly scorched. The inventory of January 1 was all on paper, but the figuring was not completed. Until it is finished and the amount of business during the first 17 days of January estimated the exact amount of the loss will not be known. The firm hope, however, that they will find that the loss is nearly or quite covered by insurance, which amounts to $190,000 on stock, $20,000 on building and $5500 on fixtures. Walbridge & Co. have taken a lease of the stores Nos. 102 and 104 Seneca street, where they hope to be in shape to take care of their wholesale trade in a few days. They do not contemplate opening a general retail Hardware business until they get back on the old corner again, which they expect will be as early as July 1 next. In the meantime they would be pleased to receive catalogues and price-lists to assist them in ordering a new stock. They state that they have received many telegrams and letters expressing sympathy, for which they are profoundly grateful.

THE HOLMES & EDWARDS SILVER COMPANY, Bridgeport, Conn., are manufacturing Flatware in Spanish pattern, an exact imitation of the Christofel pattern, which they refer to as well known and much desired in the Spanish speaking countries. The manufacturers state that these goods are made of the very best nickel silver, and plated in full 12-ounce sectional plate. The durability and superior finish of these goods are referred to as being so marked as to recommend them to the trade. Their catalogue is printed in English and Spanish.

LINCOLN & WOOD COMPANY, Taunton, Mass., are preparing to put on the market Bit Stock Drills, the prominent features of which we are advised will be quality and finish. They expect to be able to furnish prices and samples by March 1, if not before. They state that the best mechanical skill will be employed in the manufacture of these goods, and that no pains will be spared to make them desirable in every respect.

PENNSYLVANIA WIRE WORKS, Philadelphia, Pa., Edward Darby & Sons, proprietors, issue a calendar for 1891, on which their manufactured goods are displayed in a novel manner. It consists of a card 12 x 16 inches with an eyelet at the top for hanging. Their name and a list of their goods occupy the upper portion of the card. The calendar sheets, 7½ x 8½ inches, are attached to the card a little above the center, leaving a margin of 1½ inches around their three sides. This space is taken up with 15 samples of Wire Cloth 1½ inches square, showing from No. 2 mesh of No. 18 Wire to No. 50 mesh No. 35 Wire.

THE YALE & TOWNE MFG. COMPANY are gradually getting their sample rooms at 152 and 154 Wabash avenue, Chicago, into proper condition. They have been overhauling the building in order to adapt it more completely to their purposes. It is their intention to make the remodeled store one of the handsomest devoted to Hardware in the country.

A GENTLEMAN with a large acquaintance with the leading railroads and railway supply houses in the West and South advertises under the cognomen "C. I. S." for an additional line of goods for representation in his territory. This opportunity is worthy the attention of parties desirous of placing their goods in that locality.

THE NEW YORK STAMPING COMPANY, Brooklyn, E. D., N. Y., announce under date 10 inst. that they have added to their line of Hardware specialties the manufacture of Curry Combs, having recently purchased the entire plant of the Climax Curry Comb Company of New York. They state that with their excellent facilities for the production of sheet-metal goods they are determined to put on the market at an early date a full line of Improved Climax Curry Combs, the quality and finish of which are referred to.

P. & F. CORBIN of New York and Chicago have brought out a line of aluminum goods, embracing Knobs, Escutcheons, Sash Lifts, &c., enabling a house to be finished throughout with this metal. The line is confined to high-grade goods of artistic design, to meet the requirements of those who are building expensive residences. They have already fitted a number of dwellings with them, and the trade is likely to expand considerably when the fact becomes generally known that the new metal can be had in this form. The goods have a peculiar but very handsome luster, and are said to remain untarnished under all circumstances.

IN THE DESCRIPTION given in a recent issue of the Slicing Machine manufactured by the Arcadia Mfg. Company, their address was erroneously given as Newark, N. J. The correct address is Newark, N. Y. Our readers will please note the correction.

THE S. H. HAINES COMPANY, 90 Chambers street, New York, have been appointed selling agents for McCoy & Linn, Milesburg, Pa., manufacturers of Chains of all kinds, and solicit orders for the goods at factory prices.

THE TRADE will observe among the special notices on page 51 one signed "Assistant Buyer," in which the advertisers announce their desire to secure a thorough Hardwareman to take a responsible position in the store and to serve as assistant buyer. We mention this opportunity as a desirable one for those who have the requisite qualifications, as the store in question is an important one, under able management and doing a large business.

Price-Lists, Circulars, &c.

STANDARD TOOL COMPANY, for whom the Athol Machine Company, Athol, Mass., are selling agents: Chaplin Try and Center Squares, Graduated Steel Squares, Standard Depth Gauges, Improved Surface Gauges, Bevel Protractors, Standard Steel Rules, Calipers, Spring Dividers, Open-Face Calipers, Bellows Beam Micrometers, Carpenters' and Machinists' Iron Levels, Leveling Instruments, &c.

JAMES W. EAGER, Syracuse, N. Y.: Shafting, Sheet Iron, Tin, Solder, Steel, Machine, Carriage and Tire Bolts, Screws, Rivets, Nuts, Washers, Bar-Iron and Norway Nail Rods.

HITCHCOCK MFG. COMPANY, Cortland, N. Y.: Cutters, Sleighs, Road Carts and Harness. The fact that this season's demand for Cutters and Sleighs has so far exceeded that of last year, and the output being smaller than that of former years, is referred to as making it doubtful whether enough goods are in the hands of manufacturers to guarantee late orders being filed.

J. S. & M. PECKHAM, Utica, N. Y.: Cultivator Teeth, &c. Their assortment comprises many styles of Cultivator Teeth, Cultivator Points, Wing Shovel Plow Blades and Hillers, Shovel Plow Blades, Sulky Cultivator Blades, Cultivator Bolts, Hooks, Handles and Irons, Plow Clevises, Hay-Fork Pulleys and Pulley Hooks, Cultivators and Horse Hoes, Steel Blade Road Scrapers, Shovel Plows and Walking Plows.

JAMES H. HALL PLOW COMPANY, Maysville, Ky.: Champion, Lone Star, Clipper and Eagle Walking Plows, Eclipse Double Mold-Board Plow, Planting and Cultivating Flukes, Improved Rotary Hoes, Harrows, Shovel Plows, Sulky Plows, &c.

PEARSON'S CARRIAGE WORKS, Salina, Kan.: Road Wagons, Half-Platform Wagons, Road Carts, Buggies, &c. These goods are sold direct to consumers.

A. P. DICKEY MFG. COMPANY, Racine, Wis.: Grain-Cleaning Fan, Frame Bob Sleds, Oscillating Bob Sled, Land Roller, True Principle Feed Cutter, Repairs, Extras, &c. Referring to the Oscillating Bob Sled, it is stated that the Oscillating Steel Knee gives to each runner a free

and independent motion, and allows such to adjust themselves to any uneven ground. These Bobs are coupled with an extension reach, and can also be extended to carry long lumber.

GOSHEN SASH AND DOOR COMPANY, Goshen, Ind.: Screen Doors, Sash Doors, Blinds, &c. Their Screen Doors are described as being made ¾ inch wider and 1 inch longer than regular sizes to allow for fitting; are covered with Cortland, Wickwire Bros.' Wire Cloth, raised Molding outside and stained Black Walnut, with Moldings oiled.

B. VEERKAMP & SONS, Cincinnati, Ohio: Buggies, Carriages, &c. The Buggies and Carriages are made in AA, B and A grades. The Ada Road Cart is described as having three springs. The seat can be regulated to balance for one or two passengers.

CORNWALL & SMOCK, 281 and 283 Broadway, New York: Arms, Ammunition, Fishing Tackle, Skates and Sporting Goods. Illustrations are given of Union Hardware Company's, Winslow's American Club pattern, and Long Reach Club Skates. They can also furnish the Austria, American Club and German Acme Skates.

M. S. SHAPLEIGH, 112 South Fourth street, Philadelphia, Pa.: Self-Registering Wire Gauge. This Gauge is made of polished steel, and so arranged as to register the gauge of wire automatically.

SCHAEFFER & CO., Dayton, Ohio: Gem Lawn Sweeper, Gem Wire Rake and Davis Lawn Rake. The Lawn Sweeper is described as sweeping and cleaning the lawn by means of a strong current of air created by a rapidly-revolving Fan, with brushes attached to and forming part of Fan Blades, within a casing, open beneath, and provided with rear opening for the discharge of rubbish.

ORR & LOCKETT HARDWARE COMPANY, Chicago: Hardware, Fine Cutlery and Tools, Marty Rat Traps, Alaska Refrigerators, the Q. Z. Lawn Mower, California Lawn Sprinklers, Skidmore Window Balcony and Fire Escape, Mogul Draft Springs, Zimmerman Carpet Stretcher, &c.

THE E. COVERT MFG. COMPANY, Farmer Village, N. Y.: Trimmed Neck Yokes, Bridle Rosettes, Hame Strap attachments, Cyclone Halter Trimmings, Daisy Wheel Jack, Safety Pole Tips, Rope Horse and Cattle Ties, Snaps, &c.

GENESEE VALLEY MFG. COMPANY, Mt. Morris, N. Y.: Sad and Tailor Irons, Missouri Grain and Fertilizer Drill, Little Tiger Fanning Mill, Fargo V-Tooth Harrow, Parsons' Triplet Field Roller, Bodine-Jonval Turbine Water Wheel, Mill Gearing, Shafting, Pulleys, &c.

DAVIS & COOK, Watertown, N. Y.: Levels with two bulb tubes, one for leveling and one for plumbing, faced on either side with glass. The inside ring is of solid brass and so made as to fit in the grooves of the outside ring and turns on its own center to adjust. These are made in both wood and iron.

WALTER A. WOOD MOWING AND REAPING MACHINE COMPANY, Hoosick Falls, N. Y.: Horse Hay Rakes, 8-foot Self-Dump Rakes, 10-foot Self-Dump Rake, 12-foot Self-Dump Rake, 8 and 10 foot Hand-Dump Rakes. The 8-foot size is referred to as the popular size, the 10 and 12 foot sizes being adapted to regions where hay making is a very large industry.

YORK MFG. COMPANY, Portsmouth, Ohio: The York All-Steel Scraper. The body of the Scraper is made from one solid piece of sheet steel, ⅛ inch thick and is formed hot by machinery, requiring no bolts or rivets to connect the parts. High runners on the bottom are designed to prevent the bottom from wearing out. The Bails are made from steel, the Scraper being steel throughout, excepting the handles, which are made from seasoned oak. The point is made that the material used in these Scrapers, together with their shape, gives them great strength.

MANNY LEMON JUICE EXTRACTOR COMPANY, Rockford, Ill.: Manny Lemon Juice Extractors. These extractors are made of glass, Standard No. 1 being cone shaped with ribs, while No. 2 is a Saucer Extractor retaining the extracted juice in the saucer.

HENRY SEIM & CO., Baltimore, Md.: Window Glass, Plate Glass, Rough and Ribbed Plate, Rolled Cathedral, French Window, Coach, Picture, Colored, Enameled and Ground Glass.

A. M. ROSS & CO., Ilion, N. Y.: Shovels, Steel and Carbon Plows, Suction and Force Pumps, Horse-Power Fire Engines, Scoops, Spades, Planter Hoes, Hay Tedders, Mowers and Rake Extras, Brass and Gray Iron Castings, &c.

PORTER FARLEY, Rochester, N. Y., proprietor of the Rochester Show Case Works: Show Cases, Combination Cigar and Moistening Cases, Center Cases, Half-Circle and Octagonal Counter Cases, Wall Cases, Outdoor Cases, Duplex Cheval Mirrors, Nickel-Plated Display Frames, Brackets, Window Fixtures, &c.

HARVEY W. PEACE COMPANY, Brooklyn, N. Y.: Vulcan Saw Works. Saws of every description. They state that they have greatly increased their facilities by the introduction of machinery designed and patented with special reference to turning out goods of standard quality made from the best materials, hardened, tempered and finished under the personal supervision of Harvey W. Peace.

JOHN MAXWELL, 259 Pearl street, New York: Bird Cages, Parrot Cages and Stands, Mocking Bird Cages, Breeding Cages, Squirrel Cages, Wire Cuttle-Bone Holders, Seed Guards, Feed Cups and Baths and Bird Sundries.

THE EMERSON & FISHER COMPANY, Cincinnati, Ohio, Carriage Builders'. These goods are made in Atlantic, E. & F. Co., B and Quaker grades. Each grade comprises a large variety of Buggies, Pheatons, Surreys, &c.

AMERICAN LOCK CRANK COMPANY, Milwaukee, Wis.: Paine's Combination Lock Crank. This is referred to as clamping instantly to any smooth dial knob of a Combination Lock, imparting steadiness and accuracy, and is designed to insure great ease, speed and certainty in turning the dial to the numbers and unlocking.

THE WOLCOTT HARDWARE COMPANY, Hartford, Conn.: Monarch Sash Lock and Wolcott's Patent Burglar-Proof Sash Fasteners. The Wolcott's Sash Fastener is referred to as having the rear part of the sliding latch entirely concealed, being incased in the circular-bearing plate, which, it is stated, shows a handsome and symmetrical proportion, the outline of the body of the fastener being the same whether the latch is fastened or unfastened.

FRED A. WEYNER & CO., Three Rivers, Mich.: Daisy and Adjustable Buggy and Wagon Wrenches and Common Sense Buggy and Wagon Jacks. The Daisy Wrench is referred to as handling the burr, washer and wheel together, and avoids getting sand on the axle, washer or burr.

F. R. WOODWARD, Hill, N. H.: The Detective Cash Recorder, Glaziers' and Combination Tools, Improved Washer Cutters. The design of the Cash Recorder is intended to prevent or detect errors, and is used in making out bills or memoranda of business transactions. Maltby, Henley & Co., 20 Warren street, New York, are agents for these goods.

WALWORTH MFG. COMPANY, 16 Oliver street, Boston: Wrought-Iron Pipe, Brass and Iron Fittings 'for steam, gas and water, Steam and Gas Fitters' Tools and Supplies. Besides a telegraphic cypher for ordering goods, their catalogue contains a code of queries and answers for convenience in asking and receiving information by telegraph.

THE RUGG MFG. COMPANY, Greenfield, Mass.: Snow Shovels, specialties in Wood, Hand Hay Rakes, Drag Rakes, Hoe, Fork and Rake Handles, Grocery Crates, Vine Holders, &c.

WM. ROGERS, Wallingford, Conn.: Electro-Plated Spoons and Forks in Kings, Queen, San Diego, Sultana and other patterns, Silver-Soldered Nickel-Silver Hollow-Handled Fancy Pieces.

E. A. ROGERS, New Hartford, Conn., manufacturer of Hand Hay Rakes, Brooms and Solid-Back Brushes, advises us that he has recently increased his manufacturing capacity by adding another steam boiler, and is now prepared to execute all orders which he may receive.

THE HARTFORD SILVER PLATE COMPANY, Hartford, Conn.: Fine Electro-Plated Ware, Hollow ware Fruit and Berry Dishes, Cake Baskets, Casters Water Sets, Ice Pitchers, Vases, Knife Rests, Card Receivers, Candlesticks, &c.

KNICKERBOCKER ICE COMPANY, Philadelphia, Pa.: Ice Tools and Machinery, Ice Wagons, Cars, Elevators and Machinery for filling ice houses, &c. Illustrations are given of a number of Ice Wagons made for parties in this and other countries; also of Ice Machinery in operation, filling ice houses and loading vessels. Interior views of the various departments of their works are also given.

JOHN W. MILLER, Mount Carroll, Ill.: Dexter Queen and Fairy Queen Spring Buggies and Phaetons, Two-Seated Surreys, Two and Three Seated Hacks, Farm Wagons, Agricultural Implements, Farm Machinery, Windmills, Pumps, Tanks and Road Graders.

READING HARDWARE COMPANY, Reading, Pa.: Builders' Hardware. Their 1891 catalogue is 10 x 12½ inches, containing about 470 pages, bound in red leather and cloth. The paper and typographical work in the catalogue are all excellent, the illustrations clear and well defined, while the departments into which the various lines of goods are grouped indicate that the convenience of the trade has been studied. All the goods finished in one design are together, an arrangement which will be appreciated by architects and Hardware merchants, as it facilitates the selection of any special line of goods. Thus, goods of Elaine design occupy the first department in the catalogue, followed by those in Windsor design, Plain Bronze and Plain Albion. Plain Brass and Iron Front Mortise and Rim Locks, Knobs, Escutcheons, &c., are next in order, while the remainder of the book is taken up with their line of general Hardware. Some of the older patterns of goods have been dropped out to make room for newer and more desirable designs, the latter being quite conspicuous in this catalogue. A bird's-eye view of the entire works is given on a folded page in the front of the book, showing the plant as it has been rebuilt since the destructive fire which occurred in July, 1888.

THE BARTHOLOMEW COMPANY, Cincinnati, Ohio: The Bartholomew Short Turn Wagon. Attention is called to the construction of the Wagon, particularly to the Swivel Spring Bar. The manufacturers state that the sleeve and king-bolt brace together serve to hold the Swivel Spring Bar firmly against the body and relieve the king bolt from strain, thus forming a construction at once simple, durable and reliable.

DEERE & CO., Moline, Ill.: The New Deal Plow. This series of Plows is made in all sizes from a single-furrow Plow cutting 12 inches up to an eight-furrow Plow cutting 80 inches, or nearly 7 feet. A seat may be attached, making it a riding Plow, adding to the ease and comfort of the operator, especially in the larger sizes.

EXPORTS OF HARDWARE.

Year Ending June 30, 1890.

Countries to which exported.	Castings not elsewhere specified.	Cutlery.	Fire Arms.	Locks, Hinges and other Builders' Hardware.	Nails and Spikes.		Saws and Tools.	Scales and Balances.	Wire.	Total value of exports of domestic merchandise.
					Cut.	Wire, Wrought, Horseshoe and others, including Tacks.				
Argentine Republic	$21,535	$1,396	$22,048	$47,101	$2,995	$19,602	$155,801	$26,599	$1,074	8,322,627
Austria-Hungary	.....	.....	375	75	.....	.....	289	.....	.....	945,703
Belgium	2,128	21	26,952	39,298	.....	.....	6,485	48	.....	26,140,377
Bolivia	.....	.....	628	46	.....	206	469	.....	.....	11,002
Brazil	5,871	17,225	30,254	29,410	9,638	6,143	161,717	9,137	4,484	11,902,496
Central American States:										
Costa Rica	1,108	351	5,016	16,489	1,628	815	18,151	2,161	16,386	1,098,952
Guatemala	10,224	1,640	88,087	8,127	2,387	103	21,484	3,504	27,946	1,326,388
Honduras	3,501	234	1,290	3,211	1,248	443	6,192	714	4,061	522,631
Nicaragua	1,252	3,047	9,092	11,113	3,229	798	16,915	1,702	34,854	1,270,073
Salvador	2,307	428	95,858	4,831	1,552	146	9,574	1,598	18,331	886,231
Chili	7,512	2,501	7,233	122,472	54,218	8,011	33,834	18,774	5,152	3,219,465
China	2,867	646	29,630	5,750	3,623	90	2,844	2,039	.....	2,943,790
Colombia	1,615	2,992	55,743	18,970	3,814	1,475	67,882	4,464	34,583	2,522,351
Denmark	38	.....	190	7,515	.....	86	874	10	.....	5,037,290
Danish West Indies	149	57	31	1,452	1,487	367	2,000	204	1,374	785,395
Ecuador	412	1,479	2,196	8,152	107	121	15,891	729	25,148	714,924
France	6,170	3,154	22,434	35,121	.....	738	30,693	.....	.....	49,013,004
French West Indies	57	92	.....	150	202	3	651	16	532	1,768,826
French Guiana	5	.....	.....	738	32	.....	49	40	.....	154,859
Miquelon, Langley and St. Pierre Islands.	.....	.....	.....	5,148	1,399	542	5	11	125	446,844
French Possessions in Africa and adjacent islands	.....	.....	.....	227	27	.....	10	.....	.....	199,634
French Possessions in Oceanica	1,050	.....	91	.....	997	.....	1,901	173	1,224	349,323
Germany	14,565	7,569	29,698	138,985	249	2,050	96,564	1,917	.....	84,315,215
England	27,653	19,555	81,199	366,862	853	6,173	184,534	17,500	534	383,110,693
Scotland	9,682	968	1,199	11,143	.....	1,485	9,136	417	.....	38,566,619
Ireland	200	.....	.....	2,839	.....	.....	454	95	.....	22,781,697
Gibraltar	.....	.....	.....	.....	.....	.....	68	95	220	501,421
Nova Scotia, New Brunswick and Prince Edward Island	13,802	.....	430	76,848	1,087	641	2,501	517	549	4,190,520
Quebec, Ontario, Manitoba and the North west Territory	283,759	459	10,199	170,745	11	2,499	22,877	19,978	26,627	31,454,337
British Columbia	15,660	405	7,966	17,182	4,216	104	15,271	348	2,971	1,683,106
Newfoundland and Labrador	.....	.....	87	18,647	256	229	2,269	173	.....	1,216,491
British West Indies	1,373	701	6,125	22,543	14,623	4,508	18,286	8,157	16,113	8,074,433
British Guiana	15	69	31	1,027	314	125	6,189	1,023	426	2,011,122
British Honduras	70	145	341	873	1,439	.....	3,084	248	2,386	348,564
British East Indies	.....	.....	2,579	1,475	30	4	4,069	1,261	.....	4,655,256
Hong-Kong	242	26	7,701	1,227	29	.....	2,298	10,188	.....	4,434,641
British Possessions in Africa and adjacent islands	473	123	2,460	50,038	18,413	1,318	101,318	8,612	63,828	3,228,809
British Possessions in Australasia	28,919	2,461	18,782	264,626	8,972	56,420	306,179	12,236	86,736	11,168,081
British Possessions, all other	.....	.....	115	.....	.....	.....	.....	20	.....	320,611
Hawaiian Islands	98,508	1,399	10,068	12,276	41,370	2,039	25,728	2,730	2,586	4,606,900
Hayti	328	857	83,527	17,194	10,281	1,912	14,744	3,854	2,144	5,101,464
Italy	28	.....	9,710	9,109	757	.....	1,981	21	.....	12,974,249
Japan	1,048	300	3,870	23,861	693	160	13,950	10,478	.....	5,227,186
Liberia	.....	7	326	70	576	.....	558	69	29	161,465
Mexico	57,830	10,082	61,963	131,636	47,838	10,387	160,675	21,991	129,228	12,666,108
Netherlands	4,553	341	1,844	22,495	.....	261	2,575	11,814	.....	22,487,588
Dutch West Indies	671	119	75	1,630	201	723	1,517	522	1,231	609,693
Dutch Guiana	.....	.....	30	839	12	35	823	6	.....	273,203
Dutch East Indies	72	477	215	550	.....	.....	5	528	.....	1,799,306
Peru	738	269	4,019	13,316	618	1,119	28,163	6,773	3,966	1,418,561
Portugal	.....	652	1,646	4,025	.....	.....	940	2,787	.....	3,891,789
Azore, Madeira and Cape Verde Islands	.....	66	38	2,251	.....	.....	93	.....	.....	481,452
Russia on the Baltic and White Seas	.....	.....	1,174	5,666	.....	.....	663	20,936	.....	9,785,272
Russia on the Black Sea	.....	.....	.....	431	.....	.....	2,201	.....	.....	748,293
Russia, Asiatic	.....	.....	248	.....	.....	.....	10,009	140	.....	127,966
San Domingo	373	339	4,846	6,379	6,475	873	9,245	2,109	11,501	926,651
Spain	.....	.....	2,747	608	.....	10	1,414	70	.....	12,736,273
Cuba	21,912	9,076	9,964	158,874	56,869	12,980	138,894	47,688	170,333	12,669,509
Porto Rico	11	779	2,409	7,584	2,926	709	10,663	3,878	15,057	2,247,700
Philippine Islands	.....	.....	339	1,206	.....	.....	.....	1,684	.....	122,276
Spanish possessions in Africa and adjacent islands	.....	26	.....	105	.....	.....	693	549	.....	167,741
Sweden and Norway	750	.....	53	3,736	.....	117	9,276	100	.....	3,555,633
Switzerland	.....	.....	.....	.....	.....	.....	528	.....	.....	22,170
Turkey in Europe	.....	.....	.....	377	.....	.....	83	.....	.....	15,225
Turkey in Asia	.....	.....	.....	365	.....	.....	1,132	.....	.....	29,669
Turkey in Africa	.....	.....	.....	.....	.....	.....	974	.....	.....	131,492
Uruguay	.....	2,904	17,620	14,001	225	5,797	39,199	7,647	.....	3,210,112
Venezuela	2,066	7,278	12,386	14,434	2,230	8,113	59,080	16,779	68,483	3,984,280
All other countries and ports in Asia	.....	54	.....	2,009	355	30	538	141	.....	371,901
All other countries and ports in Africa	.....	35	405	311	22	.....	278	573	.....	680,559
All other islands and ports	.....	.....	282	.....	465	.....	173	174	.....	130,959
Totals	653,102	102,851	797,564	1,985,794	311,250	160,510	1,865,603	318,749	780,222	845,293,828

Hardware and Mixed Paints.

BY A. F. G.

IN SOME sections of the country the selling of Mixed Paints has become quite a feature in Hardware stores. In other places this branch is almost entirely in the hands of the drug trade, or confined to paper hanging and decorative stores. It is desirable and expedient that Hardwaremen should take hold of these goods, as they are in direct line with materials required for building, of which the Hardware store supplies so large and important a part. The compact form of the packages and attractive appearance of the labels make them a desirable addition to the already handsome Hardware stock. This is a line in which there is no loss, if the dealer positively refuses to credit customers with any broken packages left after a job is finished. There is no danger of getting a stock of unsaleable colors on hand, as the manufacturer will willingly replace such with the shades you may desire. The profits on this class of goods are usually good and sales large, especially if the dealer secure a popular make. It is easier to sell something that is favorably known than to introduce an entirely new brand, and for this reason we suggest that a good quality Mixed Paint that is having a run in an adjoining town would be the one to seeure the agency for. The Hardwareman will be somewhat surprised after he has engaged in this line at the large number of concerns making Mixed Paints, as their representatives solicit his trade. This line of goods is not confined to Paints for the exterior of houses, but may include mixed goods in small packages for interior work to be used by the housewife, or for any little job that may need doing, where only a small quantity of material is required. Then there are Coach Colors, Wood Stains and even Tar, all of which come in small boxes ready for use. The advice of a gentleman who has had experience in retailing these goods is that the best is none too good to sell, and under no consideration make a change in any established brand as long as everything remains satisfactory. A complete assortment of whatever lines handled should be kept, while the quantity carried in stock can be increased as the demand grows.

Sampling Tin and Enameled Ware.

HIBBARD, SPENCER, BARTLETT & CO., Chicago, use methods of attaching samples of tin and enameled ware to the wall which will be of interest to our readers, illustrations of which we give herewith. The holder, Fig. 1, is made of thin tin plate, and is lightly soldered to the bottom of the sample, Fig. 2, with the eyelet projecting sufficiently to enable it to pass over a nail. Even a vessel with a projecting rim can be hung up in this way, as the thin holder will easily bend to conform to such shapes. Japanned goods, such as Bread Boxes, &c., are arranged for hanging on the wall in the same way. The solder applied to the bottom causes no serious defacement. So little solder is used that a slight application of heat will loosen the holder. In hanging samples of enameled ware the soldered holder would not do. Here screws are employed of a kind to suit the vessel. For instance, iron-handled enameled saucepans have a hole in the handle, which enables that article to be hung easily. But Pudding Pans and Preserving Kettles cannot be thus attached. For these, long screw

Fig. 1.—Holder with Eyelet for Attaching to Samples.

hooks are used, Fig. 3, two of which hold a vessel in place with its bottom against the wall, the tops of the hooks being screwed firmly against the tops of the sides of the vessels.

This plan of sampling tinware will be recognized as much better than driving

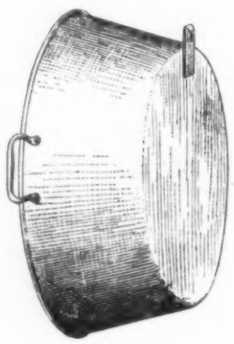


Fig. 2.—Mode of Attaching Holder to Tinware.

nails or screws through the bottom of articles to fasten them to the wall, thus rendering them unfit for future use.

It is Reported—

That the Spring City Hardware Company, Spring City, Pa., will put in an electric plant, the cost of which will be $20,000.

That W. C. Spottswood and H. M. Stewart, of the firm of Janney, Semple & Co., Minneapolis, Minn., have purchased ground in that city on which they will at once commence the erection of a two-story building, 25 x 100 feet, which will be used as a branch store.

That the Murray-Brooks Hardware Company, Lake Charles, La., have been chartered. The capital is stated to be $50,000, and business operations will commence when $15,000 is paid. Murray & Brooks, Hardware dealers in Lake Charles, H. C. Drew and others are mentioned as incorporators. Mill Supplies will be the specialty.

That on January 1 J. P. Bodine, Hardware and House Furnishing Goods, Flemington, N. J., associated with him in business his two sons, William H. and Frederick J. Bodine, the firm name becoming J. P. Bodine & Sons.

That R. W. Hunt and Drake Harris have purchased the stock and fixtures of W. S. Green, Santa Rosa, Cal., and have opened at Mr. Green's old stand with a full stock of Hardware.

That the Hardware business of J. Lerch and the Implement house of Russell & Wadsworth, Indianola, Neb., have been consolidated under the name of the Indianola Implement Company. The branch which has heretofore been doing business at McCook, Neb., will be continued.

That J. H. Uplinger, Hardware, Kingston, Ill., has sold out his business to J. E. Davis.

That B. Lengfelder, Hardware, Belleville, Ill., has sold out to G. P. Heckel.

That A. C. Willison and Frank C. Beall have purchased of the trustees of M. E. Lavin & Co., all the real estate, stock and fixtures of that firm, and under the firm

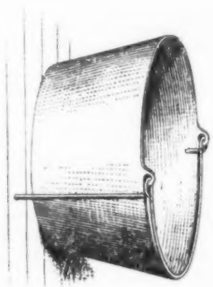


Fig. 3.—Plan for Sampling Enameled Ware.

name of the Cumberland Hardware Company, will carry on the wholesale and retail Hardware business at the old stand in Cumberland, Md. The store will be closed for a few days while inventory is being taken, but will probably be ready for business about February 1.

That G. B. Skinner Mercantile Company is the title of a new Hardware firm at Alamosa, Cal.

That the firm of Armstrong & Co., Agricultural Implement dealers at Omaha, Neb., have been dissolved by mutual consent. E. L. Armstrong will continue the business

That N. Portz & Co., Hardware, Stoves, Guns, &c., Fostoria, Ohio, has been converted into a stock company, and will hereafter be known as the Portz Hardware Company. The business will be managed by J. D. McDonel and D. R. Ballmer.

That George Schwartz & Co. have purchased the Hardware, Stove and Tinware stock of W. S. Gordan, East Portland, Ore., and will continue the business at the old stand.

That C. W. Gibbs, Hardware, has sold out his business to A. W. Kraft.

That J. I. West has opened a Hardware store at Greenville, S. C.

That Davis & Watson, dealers in Hardware and House-Furnishing Goods, Pittsburgh, Pa., have purchased the lot corner of Main and Butler streets, 40 x 150 feet, for $11,500. It is their intention to erect thereon two handsome four-story brick

buildings, which, it is thought, will be ready for occupancy about November 1, 1891. All the latest improvements will be embodied in these buildings.

That J. S. Condell & Co. is a new Hardware firm at Springfield, Ill.

That J. A. Kolbe, Doylestown, Pa., is erecting a fine building for his Hardware business.

That G. A. Diehl, Hardware and Agricultural Implements, Springfield, Ohio, has taken G. H. Eberle and W. N. Gurney into partnership with him.

That Steiner Bros., Greenville, Ala., have sold out their entire Hardware business to Jamas H. Dunklin.

That the Hardware, Stove and Gun business of Thomas G. Betts, Hawarden, Iowa, has passed into the hands of Thomas G. and Edward H. Betts, the firm name becoming Betts Bros.

That H. M. Posbo will open a Hardware store in Kirkland, Wash., in a few weeks.

That a charter has been issued to the Gorham Hardware Company, Jackson, Tenn.

That J. Mattengel's Hardware store at Tonawanda, N. Y., was slightly damaged by fire on January 6.

That W. J. Sayer has withdrawn from the firm of Plummer & Sayer, dealers in Hardware, Stoves and Tin, Minneapolis, Minn. The business will be continued by the remaining partner, F. H. Plummer.

That Townsley & Robinson, Hardware, Batavia, Ohio, have disposed of their business to a new firm, the title of which is Townsley & Co.

That Joseph Hall will open a Hardware store at Columbia, Pa.

That Andrews & McGregor, Columbia, Tenn., have sold out their Hardware business to James Andrews, who will continue it at the old stand.

That G. T. Stevenson has purchased an interest in the Hardware and Stove business of J. H. Bennett, Lawson, Mo., in whose employ he has been for several years.

That Carlson & Rehnstrom, Andover, Ill., have opened a Hardware store in the old Keagy Building, in that place.

That P. B. Cary & Co.'s Hardware and Stove store at Dunkirk, N. Y., was burglarized a short time since, and about $150 in goods and money taken.

That D. L. Wadsworth, Hardware, South Butler, N. Y., has disposed of his business to M. B. & W. H. Winegar.

That the firm of Mack & Cox, Hardware, Tinware, &c., Tuscola, Ill., has been dissolved, Everett Mack retiring. Mr. Cox will continue the business as heretofore.

That the Hardware store of E. A. Buck & Co., Palmer, Mass., was entered by burglars on the 15th inst., and about $300 worth of Revolvers and Pocket Knives stolen.

That G. V. Harrison, Pilot Point, Texas, has disposed of his Hardware store and will embark in the lumber business in the same place.

That Stewart & Noll, Seymour, Wis., have disposed of their stock of Hardware and Implements and have bought out Strassberger Brothers, Chilton, Wis., where they will continue business.

That Behn & Benlow, Hardware, Reedsburg, Wis., have dissolved partnership, and the business will hereafter be conducted by W. J. Behn, as formerly. G. W. Benlow will retire for the present from active pursuits, but it is thought he will re-enter the Hardware business in the near future.

That R. M. Boggs will open a new Hardware store in Boise City, Idaho, about the middle of February.

That C. Kimball, of Kimball & Turnage, Princeton, Ind., has sold his interest in the Implement business of that firm to Martin Meyer. The new Implement firm will be known as Meyer & Turnage.

That the Hardware store of Dilley, Connelly & Mansfield, Tyler, Texas, was entered by burglars on the 10th inst. The booty consisted of Revolvers of different makes and valued at $100.

That the Hardware firms of Switzer Bros. and George Switzer, Toledo, Ohio, will soon consolidate. The business will probably be conducted under the firm name of Switzer Bros.

That G. W. Shannon & Co. is the name of a new Hardware firm at Anacortes, Wash.

That the Lion Hardware Company, Springfield, Ohio, have been incorporated, with a capital of $10,000

That P. T. Bartholamew, Geneva, Ill., has disposed of his Hardware business to Wilcox & Carlisle.

That Kinney & Cooley, Hardware, Guns, Machinery and Agricultural Implements, Wooster, Ohio, have taken J. C. Schultz into partnership and bought out the D. D. Miller Hardware Company of that place.

That L. C. Peabody, Windom, Minn., dealer in Hardware, was recently burned out.

That G. M. Foote's Hardware establishment at Stronghurst, Ill., was recently destroyed by fire. The loss was $11,000, on which there was an insurance of $5000.

That John Russell, formerly with C. M. Davis, Phillips, Maine, will soon open a store at Rangeley.

That H. S. Blatt & Sons, Hardware merchants, at Mercer, Pa., have removed their establishment to Elwood, Pa.

That R. E. Bruce has become a partner in the Hardware business of W. S. Sublett, Richmond, Va. The firm name is now Sublett & Bruce.

That G. E. Seyler, Prophetstown, Ill., has disposed of his Hardware business to Wm. McNeil.

That W. T. Cunningham has retired from the Hardware firm of Cunningham & Hoover, Rossville, Ill.

That E. N. Whitney and E. P. Orr have opened a Hardware store at Waterman, Ill.

That Isaac Jones has bought a half interest in the Hardware store of H. C. French & Co., Cassopolis, Mich.

That T. B. Rhodes has sold his Hardware and Implement business in Anna, Ill., to W. H. Garrett.

That the firm of W. B. Dodge & Co., Hardware, will be re-established in Waukegan, Ill., early in the coming spring.

That the Ord Hardware Company will succeed to the business of H. C. Sorrenson, Ord, Neb.

That J. F. Stewart will open a new Hardware store at South Superior, Wis.

That Christensen, Miller & Marti, Hardware and Lumber, Morgan, Minn., have dissolved. The business will be continued by Miller & Marti.

That Martin, Sizeman & Co., is the name of a new Hardware concern at Winston, N. C. They have leased the building formerly occupied by R. R. Crawford, dealer in Hardware, Implements, &c.

That L. A. Burbank has opened a new Hardware store at Milton, Mass.

That the Huber & Kalbath Hardware Company have been incorporated at Oscaloosa, Iowa, with a capital of $60,000.

That Harstad & Waylander, Agricultural Implements, Grove City, Minn., have been succeeded by N. Waylander.

That W. A. Burr, dealer in Hardware, Agricultural Implements, &c., Hartford, Conn., has nearly finished a storehouse, 25 x 40 feet, two stories high, made necessary by increasing business.

That Webber Bros., Lockport, N. Y., will remove to a new store in April.

That T. V. Knatvold has retired from the Knatvold Hardware Company, and been succeeded by E. W. Knatvold.

That S. H. Gaylord & Co. will remove their Hardware store from Blossburg to Kane, Pa.

That Booth Bros., Mitchell, S. Dak., are getting ready to move their Hardware stock from their present location to the Geo. E. Letcher Building.

That Schultz & Nostitz, Hardware dealers at Medford, Wis., have dissolved. P. Schultz will continue the business.

That the handsome Hardware store of Michael Caffrey, Archibald, Pa., was burned out on the 20th inst. and his residence ruined.

A Conveniently Arranged Store.

AMONG the enterprising firms in the retail stove and hardware trade at Walton, N. Y., are St. John & White. This firm occupy all but one room of the first floor of the substantial brick building at the corner of Bridge and Delaware streets. The store was fitted up from plans drawn by the firm, and the two main stores or rooms have a combined frontage of 38 feet on Delaware street and a depth of 60 feet. The front is of plate glass, as are also the doors, panels and transoms. By this means ample light is secured. At the right, as one enters the store, is to be found an extensive assortment of shelf and builders' hardware, of which the firm carry in stock a large line. This is kept in a case of drawers, numbering between 700 and 800, and extending 44 feet down the store and to within 2 feet of the ceiling. The fronts are of oak, finished in hard oil, and carry a sample of the goods contained. The two stores are practically one, there being between them nothing but iron posts. Near the front of the store is a fine office for the bookkeeper, where all cash sales are paid. In the rear of this is a line of shelving on spindles, which rest on a base, with bins for strap and tee hinges and other heavy hardware. The shelving is utilized for the display of smaller articles of tinware, lanterns and household goods. On the opposite side is shelving, also supported by spindles, and so arranged as to accommodate large stock. The upper shelving is reached by means of the Coburn store step service, consisting of ladders running on trolleys. In the rear of the store are a glass rack, nail counter and other conveniences. Opening from these stores is a stove room, having a frontage of 20 feet on Bridge street. The smaller constructions are placed on hanging shelves, while beneath them are the cooking stoves, the ranges occupying the center. The plumbing department is in the basement. Back of the main store is the

receiving room, where all goods are unpacked, thus keeping the main portion of the store free from dirt and dust. This enterprising firm, which is composed of J. W. St. John and John P. White, does an extensive business and gives employment to a large force of men.

Exports.

PER BARK ALICE, DECEMBER 29, 1890, FOR DUNEDIN, NEW ZEALAND.

By H. W. Peabody & Co.—1 case Hardware, 4 cases Tools, 1 case Boring Machines, 3 crates Churns, 2 cases Wringers, 1 box Edge Tools, 1 box Plated Ware, 10 cases Edge Tools, 3 dozen Wringers, 22 packages Hardware, 1 cask Pumps, 300 feet Sash Cord, 1 case Plated Ware, 2 cases Lampware, 15 packages Hardware, 2 cases Bolts, 800 pounds Nails, 3 packages Lampware, 32 dozen Wringer parts, 10 cases Hardware, 1 cask Pumps, 578 pounds Nails, 6 dozen Stencils, 18 Wringers, 9 gross Pencils, 5 gross Stamped Ware, 6 dozen Traps, 4 dozen Gas Fixtures, 1 dozen Meat Choppers, 4 dozen Forks, 5 cases Bolts, 21 packages Lampware, 6 dozen Forks, 1660 pounds Nails, 20 Pumps, 12 dozen Stamped Ware, 24 packages Hardware, 15 Axles, 8 dozen Wringers, 12 Road Carts, 7 dozen Wringers, 9 sets Axles, 3 packages Axles, 10 sets Axles, 24 dozen Mouse Traps.

FOR AUCKLAND.

By T. C. Pollock.—4 boxes Pumps, 1 box Glass Oil Cans.
By R. W. Cameron & Co.—6 gross Hardware, 1 case Lamp Goods.
By McLean Bros. & Rigg.—500 Hog Rings, 15 cases Cartridges.
By W. H. Crossman & Bro.—8 dozen Hammers, 3 dozen Traps, 5000 Percussion Caps, 5 Stuffers, 5 dozen Axes, 1 case Pump parts, 12 packages Hardware, 14 packages Lamp Goods, 9 packages Hardware.
By H. W. Peabody & Co.—3 dozen Hoes, 600 pounds Nails, 2 cases Stamped Ware, 1 case Razor Strops, 6 dozen Wringers, 6 dozen Rat Traps, 1 case Flint Paper, 29 packages Lamp Ware, 6 cases Implements, 32 packages Hardware, 2 cases Bolts, 1 case Lamp Ware, 1 case Nails, 27 packages Lawn Mowers, 4 dozen Corn Shellers, 4 Hoes, 4 bundles Hardware, 8 dozen Broilers, 8 boxes Grindstone Fixtures, 48 cases Hardware, 9 boxes Tools, 11 packages Hardware, 5000 feet Sash Cord, 3 Plows, 1 case Squeezers, 2 cases Hardware, 1 case Rakes, 30 dozen Wringers.

FOR DUNEDIN.

By Strong & Trowbridge.—50 kegs Nails, 6½ dozen Wringers, 31 dozen Lanterns, ¼ dozen Coffee Mills, 1 dozen Meat Choppers, 109 pounds Stone, 438 pounds Hardware, ⅓ dozen Scoops, ½ dozen Miter Boxes, 8 dozen Padlocks, 1 dozen Augers, 115,000 Rivets, 31 Pumps, 24 dozen Coat Hooks, 1 dozen sets Sad Irons, 6 dozen Mattocks, 3 dozen Brackets, 6 dozen Wood Faucets, 6 dozen Hammers, 50 dozen Wire Goods, 6½ dozen Door Springs, 32 Fire Arms, 13,000 Cartridges, 40 Hardware, 1 dozen Molasses Gates.

FOR WELLINGTON.

By McLean Bros. & Rigg.—12 dozen Hay Forks, 1½ dozen Wringers, 13 dozen Axes, 31 pairs Springs, ½ dozen Mangles, ⅜ dozen Grindstones, 6 dozen Mattocks, 10 dozen Hammers, 6 Seed Drills, 3 dozen Meat Choppers, 22 Pumps, 3½ dozen Wringers, 3 dozen Apple Parers, 74 dozen Axes, 13,000 Cartridges, 6 dozen Mattocks, 1000 Cartridges, 6 dozen Wire Broilers, 1575 pounds Horse Nails, 8 Velocipedes, 3 dozen Churns, 1 dozen Hay Knives, 2 dozen Bush Hooks, 2000 Metallic Cartridges, 3 packages Lamp Goods, 5 dozen Axes, 55 dozen Rakes, 1 dozen Wringers, 1 dozen Toy Pistols, 1 case Granite Ironware, 1 Vise, 2 dozen Whip Sockets.
By W. H. Crossman & Bro.—20 dozen Axes, 3 dozen Cages, 3 dozen Lemon Squeezers, 12 sets Axles, 3 gross Lead Pencils, 1 Scale.
By H. W. Peabody & Co.—3 cases Edge Tools, 28 packages Hardware, 11 packages Lampware, 2 Churns, 4 cases Wringers, 1 dozen Mouse Traps, 2 dozen Faucets, 9 Pumps, 2 packages Stamped Ware, 4 dozen Sash Cord, 7 packages Lampware, 100 pounds Nails, 9 sets Axles, 4 cases Hardware, 3 cases Stoves, 1 case Mallets, 8 Churns, 2 dozen Egg Beaters, 1 case Hardware, 5 packages Lampware, 3 crates Churns.

PER BARK BONNY DOON, DECEMBER 30, 1890, FOR DUNEDIN, NEW ZEALAND.

By Arkell & Douglas.—3 dozen Forks, 726 pounds Nails, 12 Stoves, 6 dozen Forks, 847 pounds Nails, 6 dozen Traps, 6 dozen Halters, 9 dozen Lampware, 4 dozen Planes, 9 dozen Lamps, 10 dozen Glue, 2 Boring Machines, 16 dozen Drills, 8 dozen Whiffletrees, 8 Scales.

FOR WELLINGTON.

By Manhattan Brass Company.—170 dozen Lampware.
By A. Field & Co.—26 packages Stoves.
By Arkell & Douglas.—75 dozen Axes.

FOR AUCKLAND.

By A. S. Lascelles & Co.—30 dozen Axes.
By Arkell & Douglas.—4 Stoves.

PER BRIG DAISY, JANUARY 3, 1891, FOR CAPE TOWN, SOUTH AFRICA.

By R. W. Forbes & Son.—58 packages Plows, 2 Churns.
By Knight Bruce.—10,000 pounds Barb Wire, 57 pounds Pencils.
By W. B. Fox & Bro.—172 pounds Hardware, 180 pounds Coffee Mills, 170 pounds Meat Cutters, 1024 pounds Churns, 2721 pounds Stoves.
By W. H. Crossman & Bro.—3 cases Hardware, 2 Hardware, 3 cases Hardware.
By Arkell & Douglas.—3 dozen Axes, ½ gross Saw Blades, 5 dozen Saws, 3 Choppers.
By Strong & Trowbridge.—12 Ranges.
By Coombs, Crosby & Eddy.—21 dozen Lamps, 6 Meat Choppers, 6 Ladders, 6 Mills.

PER SHIP JOSEPH H. SCAMMELL, JANUARY 10, 1891, FOR MELBOURNE, AUSTRALIA.

By H. W. Peabody & Co.—7500 pounds Nails, 76 cases Skewers, 4 cases Wringers, 13 packages Hardware, 6 dozen Brushes, 8 dozen Meat Choppers, 1 case Hardware, 11 cases Edge Tools, 2 Churns, 1 case Hardware.
By W. H. Crossman & Bro.—4 dozen Pumps, 22 packages Hardware, 10 Vises, 4 dozen Bush Hooks, 1 dozen Wringers, 11,500 Loaded Shells, 10,000 Paper Shells, 1 case Stove parts, 2 packages Pump parts, 42 dozen Axes, 15,680 pounds Barb Wire, 11 packages Lamp Goods, 8 cases Hardware, 6 dozen Shears, 3 dozen Traps, 2 cases Lamp Goods, 12 dozen Hammers, 10 cases Hardware.
By R. H. Dana & Co.—72 cases Axes, 6 cases Spades, 40 bundles Barb Wire, 1 case Rakes, 3 cases Forges, 1 cask Pumps, 1 case Locks, 2 cases Banks, 4 cases Hardware, 60 cases Axes, 1 case Fire Arms.
By Simpson, Hall, Miller & Co.—28 packages Plated Ware.
By Hammacher & Delivs,—19 packages Hardware.
By Meriden Britannia Company.—3 packages Plated Ware.
By Champion Belt Hook Company.—1 box Belt Hooks and Punches.
By Winchester Repeating Arms Company.—20 Guns, 24,500 Cartridges, 20,000 Shells.
By Russell & Erwin Mfg. Co.—70 packages and 26 cases Hardware.
By Healy & Earl.—8 Cases Wood-Working Machinery, 2 packages Pumps, 1000 Lamps, 7 packages Blowers.
By A. S. Lascelles & Co.—3 cases Nails, 3 boxes Plated Ware.
By W. E. Peck.—3 cases Plated Ware, 280 pounds Hardware, 71 pounds Plated Ware.
By Strong & Trowbridge.—150,000 Skewers, 10 Hatchets, 9 dozen Forks, 3 dozen Bush Hooks, 6 dozen Hammers, 3 dozen Hay Knives, 9 dozen Emery Wheels, 50 dozen Lampware, 8½ dozen Hardware, 77 pounds Glue, ¼ dozen Boring Machines, 3½ dozen Shellers, ¼ gross Scrapers, 13 dozen Axes.
By R. W. Forbes & Son.—2 cases Files, 1292 pounds Manila Paper, 14,000 Cartridges, 18,500 Bolts, 9 cases Hardware, 6 reams Sandpaper, 30 gross Pencils, 2 dozen Stencils, 1½ dozen Wringers, 4 Stoves, 15 dozen Brushes, 8 packages Lampware, 6 packages Hardware.

Paints and Oils.

It should be understood that the prices quoted in this column are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a considerable range of prices.

In the general situation in these trades there has been scarcely any changes the past week. Orders for both Paints and Oils come along rather slowly as yet, and are chiefly for moderate quantities, yet the aggregate distribution would appear to be up to the average for the season and the outlook favorable. On leading Pigments former prices are quoted, and, outside of a reduction on Quicksilver Vermilion, due to lower costs of Quicksilver, there is no change to note on Colors. Linseed-Oil values have remained uncertain pending the conference of crushers, but prices for other Oils keep remarkably steady.

Paints and Colors.

White Lead.—Orders have not been as numerous the past week as they were during the week preceding, yet corroders state that sales make a fairly good showing considering the adverse weather conditions. No circumstances have arisen that tend in any manner to disturb values. Present prices for the pure pigment are considered reasonable in comparison with the cost of crude material, and, while cheap Leads are selling fairly well it does not appear that competition from the goods is such that would cause corroders uneasiness. There is some irregularity in quotations for the inferior article, but no radical changes are noted.

Zincs.—Prices for both domestic and foreign brands stand precisely as quoted heretofore, and the market presents a steady tone. The demand is rather slow at present, however, and current movement is chiefly in the form of deliveries on back orders.

Colors.—Owing to the lower cost of crude material manufacturers have reduced their prices for Quicksilver Vermilion to 70¢ for bulk, 71¢ for bags and 75¢ for smaller packages. Apart from this there have been no changes in prices during the past week. The Paris-Green manufacturers have failed to harmonize, and prices for that commodity for the coming season are uncertain. As regards business there is nothing to report beyond the ordinary movement in either house-painters' Colors or grinders' stock.

Oils and Turpentine.

Linseed Oil.—Several conferences of crushers have been held the past few days, with a view to effecting some arrangement under which more uniform prices may be established. As yet no action has been taken beyond appointing a committee to formulate plans of association. The present movement is under the leadership of President Thompson of the National Lead Trust, and it is therefore believed that something more than an ordinary agreement as to prices is contemplated. In point of fact, the impression is that a consolidation of all the crushers into an organization similar to the Lead Trust will be attempted. Pending negotiations, the former line of prices is maintained on both city and out-of-town brands. Business has been rather slow during the week and the demand is moderate at the present time.

Cotton-Seed Oil.—Prices for crude product are about 1¢ @ 2¢ per gallon higher, and the market is firmer at the advance. The improvement is due in part to steady demands for supplies for both export and home trade account, but smaller stocks of suitable quality, raw material and consequent higher cost of the same, also tends to keep prices upward. Prime quality Oil has been sold at 29¢ and off grade at 20¢ @ 25¢. The refined products are about 1¢ higher.

Lard Oil.—No radical change in prices has taken place, but the market is rather unsettled, being adversely affected by a weak tendency to values of raw material. The demand at present is rather slow.

Fish Oils.—No important transactions in crude Sperm or crude Menhaden Oils have taken place, but both commodities are very firmly held at late prices. There is no crude Whale Oil in first hand. Prices for the various manufactured products remain firm and the goods are meeting with very fair sale.

Spirits Turpentine.—In this market prices have not varied more than ¼¢ during the week, but the movement has been rather in buyers' favor, under the influence of more or less accumulation of supplies in first hands here and at the South. Current quotations are 39¾¢ @ 40¢ for regular and 40½¢ for machine barrels.

Miller's Reducing Wrench and Attachments.

John A. Miller, 212 Morgan street, St. Louis, Mo., is putting on the market a reducing wrench and attachments, as illustrated herewith. Fig. 1 represents the wrench proper, while Figs. 2, 3 and 4 show

Fig. 1.—Miller's Reducing Wrench.

clearly for what purpose the attachments are intended. The statement is made that this wrench can be changed in one minute with the attachment to make it act as a thorough practical tool for a ratchet drill, ratchet brace, auger handle, wrench proper, set-screw wrench, crank wrench, threshing machine wrench, making it a

Fig. 2.—Bushing for Square or Hexagon Nut Inserted in the Eye of the Wrench.

cheap and useful tool for millwrights, car builders, machinists, engineers, bridge builders, wagon makers, carriage manufacturers, stove fitters, farmers, and mechanical pursuits in general. Attention is called to the fact that it is adapted for use in inconvenient places and overhead

Fig. 3.—Socket for Threshing Machine or Buggy.

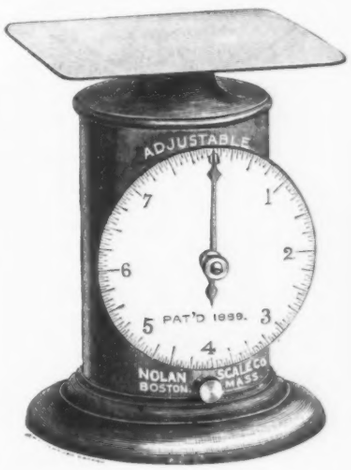
work, as by one-thirtieth part of the turn of the wrench an operator is fastening a nut. The wrench can be obtained without attachments for any special purpose. These wrenches are made in six sizes, to accommodate square and hexagon eyes

Fig. 4.—Ratchet Drill, Suitable for Eye of the Wrench.

from $\frac{7}{16}$ inch to 2 inches. The point is made that these wrenches are simple, durable, strong and easily repaired.

Adjustable Family Scale.

Adjustable Family Scale Company, 171 Tremont street, Boston, are introducing a scale, as illustrated herewith. A bucket, pan or plate for holding the articles to be weighed can be placed upon the scales, and by a simple contrivance the pointer, or hand, is turned to zero, which act displaces the weight of said articles; then pounds, ounces or half ounces can be weighed. Two sizes of these scales are made; 10-pound adjustable is graduated in half ounces; the 20-pound adjustable is graduated in ounces. These scales are nicely finished, and are referred to by the



Adjustable Family Scale.

manufacturers as simple in construction, substantially built and not liable to get out of order.

Ideal Revolving Lawn and Garden Sprinkler.

Buick & Sherwood, Detroit, Mich., are manufacturing a revolving sprinkler, as illustrated herewith. The manufacturers

Ideal Revolving Lawn and Garden Sprinkler.

state that it will sprinkle a surface 30 feet in diameter; that it will throw water 6 feet high; that it has no ground joints to wear down and consequently leak; that it will not choke with dirt; and that it will work with the very dirtiest water. The sprinklers are made entirely of brass, nickel plated and packed one in a box.

H., S., B. & Co.'s Old Gold Hammers.

Hibbard, Spencer, Bartlett & Co. of Chicago are offering to the trade an entirely new line of hammers, made for them

Octagon Poll Nail Hammer.

only. Illustrations are herewith given of a blacksmith's hand hammer and an octagon-poll nail hammer, which illustrate the fact that these goods are made with a special view to graceful lines and of the most approved patterns. They are described as manufactured of the best crucible steel, and well handled, but their peculiar feature is their finish. They have

Blacksmith's Hand Hammer.

the color of red gold, which is imparted to them by heat and is claimed to be permanent, not gradually wearing off, as electro-plated goods will. This not only gives the hammers a handsome finish, but is claimed to improve the quality of the steel. They are packed in half dozens in neat wooden boxes with sliding lids. A full line is made.

Power for the Broadway cable will be generated in an eight-story building, to be erected on that thoroughfare at Houston street.

Warwick Cycle Mfg. Company's Safeties.

Warwick Cycle Mfg. Co., Springfield, Mass., have recently put upon the market two safety bicycles, as illustrated herewith. The new Warwick, shown in Fig. 1, is described as having a full diamond frame, with a 28-inch rear wheel geared to 56; a 30-inch front wheel, both attached by 32 tangent spokes to the Warwick hollow rim, which in turn is fitted with 1¼ cushion tires of new construction. Further features are noticed, as long ball steering 5½ to 6½ cranks, especially long handle-bar and improved handle. The point is made that the bearings are dust-proof ball; and that each process and part of the wheel is gauged, from the rough drop forging to the assembling room. It is stated this wheel is constructed from wrought steel in every part, cast metal being a substance unknown in the make-up of a Warwick. The machine is finished in enamel and nickel-plate, weight 42 pounds all on. In the Ladies' Perfection Safety, Fig. 2, the same general plan of construction is followed and same class of material used, having, however, the special features demanded by lady riders, dress and mud guards, and a roomy space between peak of saddle and steering. This machine is geared to 50-inch, and weighs 40 pounds. Attention is directed to the form of the saddle, which, it is stated, fits a woman, and the grips, that find the natural position of a rider's hand.

Fig. 1.—The New Warwick Safety.

Fig. 2.—Ladies' Warwick Perfection Safety.

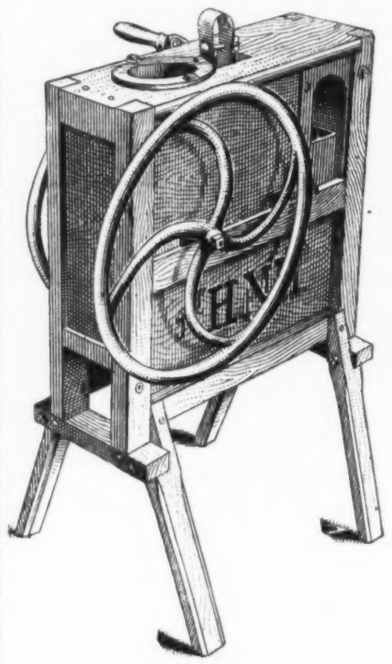
Lord's Cock and Bibb Reamer.

L. L. Lord, Meadville, Pa., is putting on the market reamers, as illustrated herewith. These are designed for cutting seats in compression basin cocks and bibbs, and it is stated that a cut seat may be made as good as new by the use of one of these reamers in five minutes. These are made in sets of five, to cut from No. 0 basin cocks to ¾-inch bibbs, as follows: ⅛, ¼, 1/16, ½ and ⅞ inch.

Lord's Cock and Bibb Reamer.

The H. N. H. Corn Sheller.

Henry N. Hubbard, 96 Chambers street and Boonton, N. J., is introducing a corn sheller, as illustrated herewith. It has an iron hopper and detachable legs. The legs are removed and placed inside the sheller for shipment. This is referred to as making a very compact package, an especially desirable feature for the export trade. The sheller is put upon the market as an exceptionally cheap sheller, having a separator, and is guaranteed by the manufacturer to do perfect work.



The H. N. H. Corn Sheller.

Leader Tea-Kettle Steamer.

S. A. Wilde Mfg. Company, Taunton, Mass., are putting on the market a tea-kettle steamer, as illustrated herewith. It is designed to fit the opening in the tea-kettle usually occupied by the cover. The body is referred to as the cover, and sets inside of a narrow rim at the bottom. When the steamer is taken off, it is stated that the plate is left above the rim, so it can be easily removed without disturbing the contents or burning the hands.

Leader Tea-Kettle Steamer.

Wood, Smith & Co.'s No. 39 Axle.

Wood, Smith & Co., Fort Plain, N. Y., are introducing an axle, as illustrated in Figs. 1 and 2. This axle has a large

Fig. 1.—Wood, Smith & Co.'s No. 39 Axle.

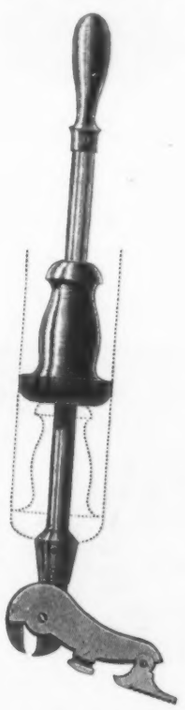
wearing surface to the collar, with large diameter of spindle directly in front of the collar, and is made with a true taper from the collar to the point, thereby doing away with the swell spindle in front of the collar, and insuring a perfect bearing for the box from the collar to the point. The manufacturers call attention to the advantages of this form as increasing the

Fig. 2.—No. 39 Axle with Box.

wearing and lubricating qualities of the axle, rendering it more serviceable and easier running.

Reid's Sure-Grip Nail Pull.

Hagen & Reid, West Troy, N. Y., are introducing a nail puller, as illustrated herewith. The manufacturers state that this pull has the advantage of having the rear jaw directly back of the front jaw, thus preventing the jaws from spreading, and instead of the strain coming on the

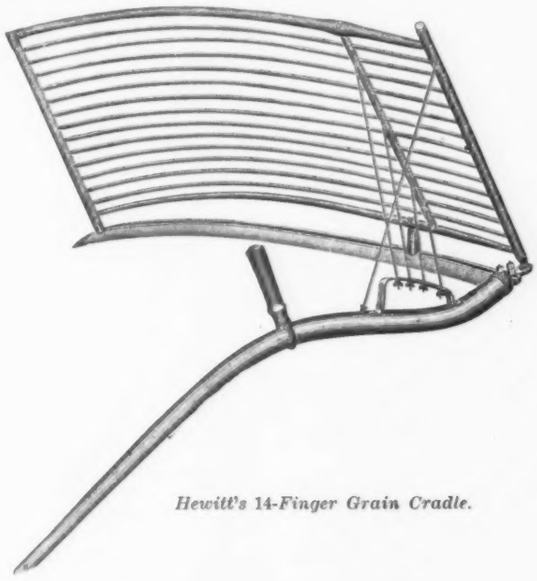


Reid's Sure-Grip Nail Pull.

rivet, the rear jaw is so constructed that the heel bears on the body of the pull. The points of the jaws are narrow, enabling them to be easily driven into the wood. The points claimed for this pull are that it pulls nails straighter, because the center of lift is raised from the box; that nails are pulled easier, because they are pulled straighter; that the sliding hammer brings the blow near the jaws, that it is nearly noiseless, because the inside of the hammer is lined with hard leather; that the jaws are made of best tool steel, carefully tempered, and are interchangeable.

Hewitt's 14-Finger Grain Cradle.

North Indianapolis Cradle Works, North Indianapolis, Ind., are putting on the market a 14-finger grain cradle, as illustrated herewith. The cradle head is made of two heavy fingers on the outsides, which are secured to pieces across each end, and inserted in these cross pieces are 13 fingers made of $\frac{5}{16}$ hickory rods, placed $1\frac{1}{2}$ inches apart. Near the back end of the cradle head is another cross piece, through which the fingers pass, its object being to hold the wire brans which secure the head to the snath. The snath at its lower end is provided with their Mohawk fastening for the snath, and to this the cradle head is secured by a hook, which is attached to the back cross piece of the head. The heel of the scythe is fastened to the snath by a loop bolt, which admits of large latitude for adjustment, while the point is fastened to the front cross piece of the head by means of a close-fitting right-angle hook. On the inside of the snath and above the fastening for the scythe is an iron bow secured to the snath with bolts. To this bow the wire brans are secured by nuts, the brans being threaded for this purpose. It is stated that this method of construction leaves the outside of the snath perfectly smooth where it comes in contact with the clothing. The point is made that every piece in these cradles is an exact duplicate of its kind in every cradle, and that extra pieces can be furnished for repairs with absolute certainty that they will fit. Attention is directed to the fact that these cradles are all made for 46-inch scythes; consequently any scythe fitted to one of these cradles will fit all.



Hewitt's 14-Finger Grain Cradle.

Blizzard Ice Creeper.

S. W. Kent, Meriden, Conn., is introducing an ice creeper for horses, as illustrated in Fig. 1. It is described as being

Fig. 1.—Blizzard Ice Creeper.

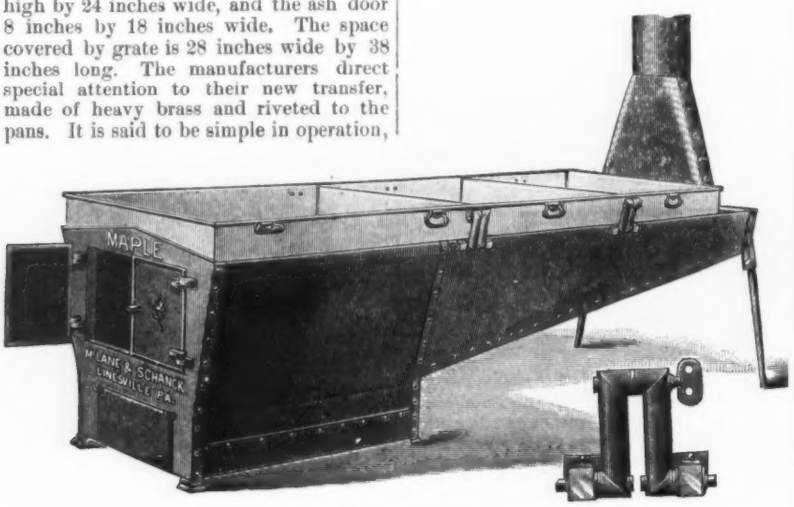
a light framework of malleable iron, to be fitted upon the inside of the shoe, and has four points or calks upon the ground, the points being made of the best

Fig. 2.—Wrench for Fastening the Creeper.

hardened steel. Fig. 2 shows the wrench which accompanies the creepers. The framework is driven well forward underneath the shoe, and then clamped on tightly by the use of the wrench. It is stated that when the calks wear out they may be knocked out and be replaced by new ones. The point is made that the horse is not obliged to wear calks when it is not necessary, as the creepers may be taken off or put on in a few minutes, and also preventing tedious waiting at a smith's to have a horse sharpened. The manufacturer claims the frames will last half a dozen years. The creepers are made in three sizes, adapted to from No. 0 to No. 6 shoes.

A New Maple Evaporator.

An improved form of maple evaporator has been brought out by McLane & Schanck, Linesville, Pa. In the accompanying cut a general view of the apparatus is shown. The frame of the evaporator is made of heavy angle iron, to which is riveted heavy sheet boiler iron, the front, back and middle sections being of cast iron. At the rear of the fire box bars of cast iron are riveted to the bottom and sides of the arch, which, it is said, prevents all danger of spreading. The fire doors have an opening of 14 inches high by 24 inches wide, and the ash door 8 inches by 18 inches wide. The space covered by grate is 28 inches wide by 38 inches long. The manufacturers direct special attention to their new transfer, made of heavy brass and riveted to the pans. It is said to be simple in operation, boiling, it is said, without any extra cost of fuel or taking any pan room on arch, thus, it is claimed, giving 6 square feet more pan surface than in the flue heaters. The heater is so constructed that it can be swung on and off the fire at will, and has regulator valve to govern the flow of sap into the pans.

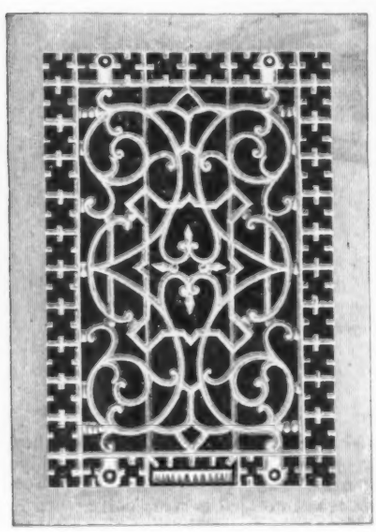


A New Maple Evaporator.

and does not need to be started, the operator regulating the flow from one pan to another by adjusting the transfer up or down. Furthermore, sap or syrup can be drawn from any pan, saving the labor of lifting it out with a scoop. Its value in finishing is particularly mentioned, as the operator can run sap or syrup from one pan to another, and raise up the transfer, run in a few gallons of water, and finish the syrup without any danger of burning it or the pans. The pans of the evaporator are made of galvanized iron or tin, heavily bound, provided with handles, and having a draw off faucet in each pan. The sides of the evaporator are to be lined, requiring about 60 common brick, and if the bottom is lined, about 20 more. The heater discharges the sap into the pans

New Patterns of Registers.

The Cleveland Register Company, corner of Platt and Carr Streets, Cleveland, Ohio, are putting upon the market a line of registers that will be of interest to the trade. Some of these goods are illustrated in the accompanying engravings and will show a few of the patterns introduced. Fig. 1 shows the Cleveland pattern vertical wheel register. These are made in 12 sizes with opening from 8 x 10 to 16 x 24 inches. They are finished in both black and white japan. The Cleveland pattern of floor borders is shown in Fig. 2. These borders are made with one or two ribs on the under side, as desired. The pattern is clearly indicated in the engraving. Fig. 3 shows a self-indicating convex-faced register and ventilator for side walls. These are made in two sizes, 8 x 10 and 8 x 12 inches, and are finished either with black or white enamel or with japanned face. The registers and borders of the Cleveland Register Company are made to interchange with those of other leading manufacturers. We understand that the company have a large force of pattern makers at work and are making additional sizes rapidly. In a short time they expect to have a very extensive stock on hand, and a few months hence will issue a complete catalogue of them.



New Patterns of Registers.—Fig. 1.—Cleveland Pattern Vertical Wheel Register.

Fig. 2.—Cleveland Pattern Floor Border.

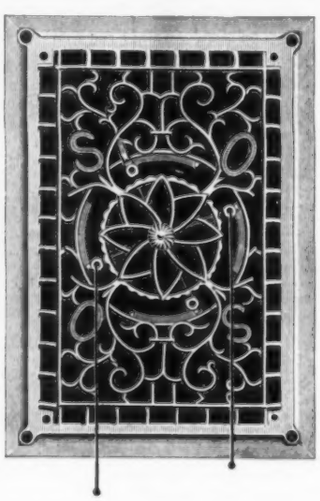
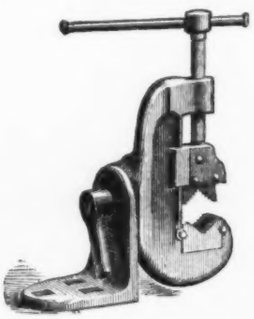


Fig. 3.—Self-Indicating Convex Face Side Wall Register and Ventilator.

Adjustable Angle-Plate Open-Frame Pipe Vise.

The cuts presented herewith show the general appearance as well as the constructive features of an adjustable angle-plate pipe vise with open frame that is being put upon the market by E. J. Jones & Co., proprietors of the Dover Machine Works, Dover, Del. The company also make a similar vise with a closed frame. Fig. 1 shows the general appearance of



Adjustable Angle-Plate Open-Frame Pipe Vise —Fig. 1.—General View of the Vise.

Fig. 2.—Showing Vise Taken Apart.

the open-frame vise, while Fig. 2 shows the parts separated. The principal advantage claimed for this vise is that it can be placed at any angle and held there.

This is done by means of notches on the angle plate and corresponding notches on the vise, which require only a slight tightening on the center bolt to hold them firmly in the position desired. All these vises are made on forms, so every part can be duplicated, the jaws being cut from cast steel and hardened. The special advantage of the open frame will be apparent to all fitters, for by its use the pipe can be put in sidewise, saving the time and labor of drawing it from the end. It is referred to as being of special advantage in taking old pipe apart, as well as for putting on and taking off fittings. The vise is adapted to hold pipe from ⅛ to 2½ inches in diameter, and its weight is 25 pounds.

Roasting Box.

Seavey Mfg. Company, Boston, are putting on the market a roasting box with pans, as illustrated herewith. The boxes are made of smooth sheet iron in three

Roasting Box with Pans.

sizes. The top and bottom are stamped with ribs centering in a circle, also with indentations as shown in the cut. A door hinged at one end opens down. The box is described as being a self baster, the meat juices dropping from the teats as fast as they accumulate, thereby basting the meat. The indentations on the lower surface serve as rests to keep the pan raised from the bottom. The manufacturers refer to the advantages of this roasting box in making meat tender and palatable.

Dutton's Safety Box Hook.

Burrill & Dutton, Boston, are introducing a box hook of novel construction, as illustrated herewith. The part of the hook that enters the handle is struck up in a die and placed in a composition metal socket. The handle is formed in

Dutton's Safety Box Hook.

two parts, placed in the rims of the same socket, having a bolt run through the handle, hook and socket. This arrangement, it is claimed, secures the hook so firmly that it is an impossibility for it to become loose. It is stated that these hooks are manufactured from a fine grade of steel and are of superior temper.

The Pewabic Copper Mine was sold at Houghton, Mich., on Saturday, for $710,000.

OBITUARY.

NAHUM STETSON, JR.

Nahum Stetson, Jr., the New York agent of the Bridgewater Iron Company, died in this city on January 20 after a protracted illness, aged 55 years. He was a native of Bridgewater, Mass., and came to this city in 1852 and entered the office of which at the time of his death he was the manager. He was a very charitable person and was connected with many charitable associations. He was a trustee of the Sheltering Arms and the secretary of the Children's Fold. He leaves a wife and three children. His funeral services will take place Friday at Bridgewater.

DANIEL O. HITNER.

Daniel O. Hitner, at one time one of the largest iron manufacturers of the Schuylkill Valley, died on January 21 at Spring Mill, Pa., after an illness extending over several weeks. He was almost a life long resident of Whitemarsh Township and amassed wealth. Mr. Hitner came from Revolutionary stock, having a grandfather on the paternal side who was killed at the battle of Germantown. He was born at Pottstown, January 15, 1815. In 1863 he and his brother purchased the William Penn furnace property at Spring Mill. In 1863 they bought of the heirs of Abraham Kunzi the old furnace at Spring Mill, and kept the two in blast until 1878, when, in the business prostration of that period, operations were suspended, never to be resumed. A year later the firm of Hitner & Bro. was dissolved, and within several years past both the furnaces have disappeared.

CHARLES W. MATTHEWS.

Charles W. Matthews, Resident Consul for Uruguay, died at his home, 716 North Broad street, Philadelphia, at an early hour on Friday morning from the effects of a surgical operation performed a week previous. The deceased was born in Trenton, and was a son of Dr. Matthews, an eminent physician, and a brother of Theodore Matthews, a prominent member of the bar of Philadelphia. His first business position was with the mercantile firm of John B. Myers, where he remained for several years, and at the beginning of the late war he entered the service, serving with distinction on the staff of General Negley. At its close he entered into business as an iron broker, having his office at 319 Walnut street. He was a member of the Loyal Legion, Grand Army of the Republic; United Service Club, Union League and Free Masons. Mr. Matthews at the time of his death was 55 years old, and leaves a widow.

PERSONAL.

Oliver O. Page, broker in iron and steel at Pittsburgh, has given up his business and accepted a position with the Linden Steel Company, Limited, of that city.

George E. McCague, for some years general agent of the Lake Shore and Michigan Southern Railroad at Pittsburgh, has tendered his resignation, to take effect on February 1 next. He will then enter upon his duties as freight agent of the Carnegie interests. He succeeds E. H. Utley, who has been made general agent of the Carnegie firms.

The Western Pennsylvania Engineers' Society elected officers for the coming year as follows: President, T. P. Roberts; vice-president, A. E. Hunt; directors, George S. Davidson, Thomas H. Johnson; secretary, J. H. Harlow; treasurer, A. E. Hunt.

The American Society of Civil Engineers concluded its annual meeting in New York 22d inst. The election of officers resulted: President, Octave Shanute; vice-presidents, Alphonso Fiteley and Charles Hermary; secretary and chairman, Francis Collingwood; treasurer, John Bogart; directors, Charles B. Brush, Rudolph Herring, Clemens Herschel, Edward P. North and P. Whinery.

The President appointed Colonel Daniel W. Flagler as Chief of Ordnance, with the rank of Brigadier-General, to succeed General S. V. Benet, retired.

Henry D. Hibbard, a well known expert in open hearth steel furnace work, has established an office at 317 Lewis Block, Pittsburgh.

A firm in Wall street boast that in four years they have brought $43,000,000 of English capital to this country for investment in industrial and business enterprises.

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CURRENT HARDWARE PRICES.

JANUARY 28, 1891.

Note.—The quotations given below represent the Current Hardware Prices which prevail in the market at large. They are not given as manufacturers' prices, and manufacturers should not be held responsible for them. In cases where goods are quoted at lower figures than the manufacturers name, it is not stated that the manufacturers are selling at the prices quoted, but simply that the goods are being sold, perhaps by the manufacturers, perhaps by the jobbers, at the figures named.

Adjusters, Blind.

Domestic.....₩ doz $3.00, 33⅓%
Excelsior.....₩ doz $10.00.....50&10&2%
Washburn's Self-Locking.....20&20&10%

Ammunition.—

Caps, Percussion, ₩ 1000—
Hicks & Goldmark's and Union Metallic Cartridge Co.
F. L. Waterproof, 1-10's.....34@35¢
E. B. Trimmed Edge, 1-10's.....46@48¢
E. B. Grnd. Edge, Cent. Fire, 1-10's.....46@47¢
Musket Waterproof, 1-10's.....50¢
G. D.....28¢
S. B. Genuine Imported.....45¢
Eley's E. B.....54¢ @ 55¢
Eley's D Waterproof, Central Fire...$1.60

Cartridges—
Rim Fire Cartridges.....50&5&2 %
Rim Fire Military.....15&2 %
Cent. Fire, Pistol and Rifle.....25&5&2 %
Cent. Fire, Military and Sporting.....15&5&2 %
Blank Cartridges, except 22 and 32 cal., additional 10 % on above discounts.
Blank Cartridges, 22 cal., $1.75.....2 %
Blank Cartridges, 32 cal., $3.50.....2 %
Primed Shells and Bullets.....15&5&2 %
B. B. Caps, Round Ball, $1.75.....2 %
B. B. Caps, Con. Ball, Swgd., $2.00.....2%

Primers—
Berdan Primers, $1.00.....2%
B. L. Caps (for Sturtevant Shells) $1.00.....2%
All other Primers, $1.20.....2%

Shells—
First quality 4, 8, 10 and 12 gauge.....25&10&2%
First quality, 14, 16 and 20 gauge ($10 list).....30&10&2%
Prize.....40&2%
Star, Club, Rival and Climax brands.....33⅓&10&2%
Seibold's Comb. Shot Shells.....15&2%
Brass Shot Shells, 1st quality.....60&2%
Brass Shot Shells, Club, Rival, Climax.....65&2%

Shells Loaded—
Standard List, July 19, 1890.....40&5%
Wads—Price per M.
U.M.C.&W. R. A.—B. E., 11 up... 68¢
U.M.C.&W. R. A.—B. E., 9&10... 82¢
U.M.C.&W. R. A.—B. E., 8..... 96¢
U.M.C.& W.R. A.—B. E., 7.....$1.10
U.M.C.&W. R. A.—P. E., 11 up.. 1.15
U.M.C.&W. R. A.—P. E., 9&10.. 1.50
U.M.C.&W. R. A.—P. E., 8..... 1.70
U.M.C.&W.R. A.—P. E., 7..... 1.80
Dis.20&2
Eley's B. E., 11 up.....$1.75
Eley's P. E., 11@20..... 2.80

Anvils.—

Eagle Anvils, ₩ ℔ 10¢.....15@15&5%
Peter Wright's.....11¼@12¢
Armitage's Mouse Hole.....10¼@11¢
Armitage's Mouse Hole, Extra...12@12¼¢
Trenton.....10@10¾¢
Wilkinson's.....10¾@11¢
Moore & Barnes Mfg. Co.....33⅓%

Anvil Vise and Drill—
Millers Falls Co., $18.00.....20%
Cheney Anvil and Vise.....25%
Allen Anvil and Vise, $3.00.....40&10%
Star.....45&5 %

Apple Parers—See Parers. Apple, &c.

Augers and Bits—

Douglass Mfg. Co.
Wm. A. Ives & Co.
Humphreyaville Mfg. Co.
French, Swift & Co. (F. H. Beecher,...
P. S. & W. Co.
Rockford Bit Company.....70&10%
Cook's, Douglass Mfg. Co.....55 %
Cook's, N. H. Copper Co.50&10&50&10&5%
Ives' Circular Lip.....60%
Patent Solid Head.....30%
C. E. Jenning & Co., No. 10, extension lip.....40%
C. E. Jennings & Co., No. 30.....60%
C. E. Jennings & Co. Auger Bits, ₩ set, 32¼ quarters, No. 5, $5; No. 30, $5.50.20%
Lewis' Patent Single Twist.....45%
Russell Jennings' Augers and Bits.25&10%
Imitation Jennings' Bits.....60@60&5%
Snell's Jennings Pattern.....60%
Pugh's Black.....20%
Rockford, Jenning's Pattern.....60%
Car Bits.....60@60&10%
Car Bits, P. S. & W. Co.....60&10%
Snell's Car Bits.....60%
L Hommodieu Car Bits.....15&10%
Forstner Pat. Auger Bits.....20%
Cincinnati Bell-Hangers' Bits....30&10%

Bit Stock Drills—
Morse Twist Drills.....50&10&5%
Standard.....50&10&5%
Cleveland.....50&10&5%
Syracuse, for metal.....50&10%
Syracuse, for wood (wood list).30@30&5%
Williams' or Holt's, for metal.50&10&10%
Williams' or Holt's, for wood...40&10%
Cincinnati, for wood.....30&10%
Cincinnati, for metal.....45&10%

Expansive Bits—
Clarks' small, $18; large, $26.....35@35&5%
Ives' No. 4, ₩ doz $60.....40%
Swan's.....40%
Steer's, No. 1, $26; No. 2, $22.....35%
Stearns' No. 2, $48.....20%

Gimlet Bits—
Common.....₩ gross $2.75@$3.25
Diamond.....₩ doz $1.10.....25&10%
Nee.....25@25&5%
Double Cut, Shepardson's.....45@4&10%
Double Cut, Ct. Valley Mfg. Co...30&10%
Double Cut, Hartwell's, ₩ gro.....$5.25
Double Cut, Douglass'.....40&10%
Double Cut, Ives'.....60@60&10%

Hollow Augers—
Ives
French, Swift & Co.
Douglass'
33⅓ @ 33⅓&10%
Bonney's Adjustable, ₩ doz $48...40&10%
Stearns'.....20&10%
Ives' Expansive, each $4.50.....50&5%
Universal Expansive, each $4.50.....20%
Wood's.....25@25&10%
Cincinnati Adjustable.....25&10%
Cincinnati Standard.....25&10%

Ship Augers and Bits—
L'Hommedieu's.....15&10@15&10&5%
Watrous'.....15&10@15&10&10%
Snell's.....15&10@15&10&5%
Snell's Ship Auger Patt'n Car Bits, 15&10@15&10@5%

Awl Hafts—See Hafts, Awl.

Awls, Brad Sets, &c—

Awls, Sewing, Common ₩ gr $1.70, 35%
Awls, Should. Peg. ₩ gr $2.45, 40@40&10%
Awls, Pat. Peg...₩ gr 63¢.....40@40&10%
Awls, Shouldered Brad..2.70 ₩ gr.....35%
Awls, Handled Brad...$7.50 ₩ gr.....45%
Awls, Handled Scratch ₩ gr, $7.50.35&10%
Awls, Socket Scratch, ₩ doz, $1.50.25@30%

Awl and Tool Sets—See Sets, Awl and Tool.

Axes—

	Plain.	Beveled.
First quality	$8.00	$8.50
Others	7.50	8.0

Axle Grease—See Grease, Axle.

Axles—

No. 1,1¼@5¢, No. 2 5½@6¼¢
Nos. 7 to 14.....55&5%
Nos. 15 to 18.....47½% 3 % cash
Nos. 19 to 22.....70%
Concord Axles, loose collar.....5¢@6¢
Concord Axles, solid collar.....6¢@7¢
National Tubular Self-Oiling.....33⅓@33⅓&5%

Bag Holders.—See Holders, Bag.

Balances—

Spring Balances.....40%

	No. 2000	20	30
Chatillon, ₩ doz	$0.80	0.95	1.75 net

Chatillon Straight Balances.....40%
Chatillon Circular Balances.....50&10%

Bars.

Crow—
Cast Steel.....₩ ℔ 3½¢
Iron, Steel Points.....₩ ℔ 3¢

Basins, Wash—

Standard Fiberware, No. 1, 10¼-inch, $2; 12-inch, $2.25; 13½-inch, $2.75; 15-inch, $3.25.

Beams, Scale—

Scale Beams, List Jan. 12, '82...50&10@50&10&5%
Chatillon's No. 1.....40%
Chatillon's No. 2.....50%
Custer's.....33⅓%

Beaters—

Egg—
Dover.....₩ doz $1.50
Duplex (Standard Co.).....₩ doz $1.25
Rival (Standard Co.).....₩ doz $1.00
Duplex Extra Heavy (Standard Co.)..₩ doz $3.50
Bryant's.....₩ gro $14.00
Double (H. & R. Mfg. Co.) ₩ gro. No. 0, $12.00; No. 1, $15.00; No. 2.....$36.00
Easy (H. & R. Mfg. Co.).....₩ gro $12.00
Triple (H. & R. Mfg. Co.).....₩ gro $16.50
Spiral (H. & R. Mfg. Co.).....₩ gro $4.50
Improved Acme (H. & R. Mfg. Co.).....₩ gro $9.00
Paine, Diehl & Co.'s.....₩ gro $24.00
Silver & Co.....₩ doz $5.50

Culinary—
Keystone, P.D.&C., Each, No. 1, $1; No. 2, $2.....20 %

Bells—

Cow—
Common Wrought.....60&10%
Western.....20&10%
Western, Sargent's list.....70&10%
Kentucky, "Star".....20&10%
Kentucky, Sargent's list.....70&10%
Dodge, Genuine Kentucky....70@70&10%
Texas Star.....50&10@50&10&5%
Call.....40@40&5%
Farm Bells.....₩ ℔ 3¢@3½¢
Steel Alloy Church and School Bells..40%

Door—
Gong, Abbe's.....33⅓&10%
Gong, Yankee.....45&10%
Gong, Barton's.....40&10@50%
Crank, Taylor's.....25&10%
Crank Brooks'.....50&10&2%
Crank Cone's.....10%
Crank, Connel's.....20&10%
Lever, Sargent's.....60&10%
Lever, Taylor's Bronzed or Plated....net
Lever, Taylor's Japanned.....25&10%
Lever, R. E. M. Co.'s.....50&10&2%
Pull, Brook's.....50&10&2%
Pull, Western.....25&10%

Electric,
Wollensak's.....20%
Bigelow & Dowse.....20%
Taylor's.....20%

Hand—
Light Brass.....75&10%
Extra Heavy.....65&10%
White Metal.....60&10&10%
Silver Chime.....33⅓&10%
Globe (Cone's Patent).....25&10@35%

Bellows—

Blacksmiths'.....66&5@65%
Molders'.....40@40&10%
Hand Bellows.....40&10@50%

Belting, Rubber—

Common Standard.....70@70&5%
Standard.....60&10&10@70%
Extra.....50&10@60%
N.Y.B.&P.Co., Carbon...50&5@50&10&5%
N.Y.B.&P.Co., Diamond....40&5@40&10%

Bench Stops—See Stops, Bench.

Benders, Upsetters, Tire.

Stoddard's Lightning Tire Upsetters..15%
Detroit Perfected Tire Bender.....15%

Bits—

Auger, Gimlet, Bit Stock, Drills, &c., see Augers and Bits.

Bit Holders—See Holders.

Blind Adjusters—See Adjusters, Blind.

Blind Fasteners—See Fasteners, Blind.

Blind Staples—See Staples, Blind.

Blocks—

Ordinary Tackle, list May 20, 1889.....60&10&10@70%
Cleveland Block Co., Mal. Iron.....50%
Moore's Novelty, Mal. Iron.....50%

Boards, Stove.

Wood Lined "Crystal".....50%
"Embossed".....60%
"Oxidized".....45%
Paper Lined Zinc.....55%
"Crystal".....55%
"Embossed".....55%
"Oxidized".....45%

Bolts—

Carriage, Machine, &c.—
Com. list June 10, '84.....70&10&5&2%
Genuine Eagle, list Oct., '84...75&10@80%
Phila. pattern, list Oct. 7,'84..80@80&10%
R.B.&W., old list.....70%
Machine, list Jan. 1, 1890.....75&10@75&10&5%
Bolt Ends, list Jan. 1, 1890.....75&10@75&10&5%

Door and Shutter—
Cast Iron Barrel, Square, &c..70@70&10%
Cast Iron Shutter Bolts.....70@70&10%
Cast Iron Chain (Sargent's list)...65&10%
Ives' Patent Door Bolts.....60%
Wrought Barrel.....70@70&10%
Wrought Square.....70@70&10%
Wr't Shutter, all Iron, Stanley's..60&10%
Wr't Shutter, Brass Knob, " ..40&10%
Wr't Shutter, Sargent's list.....60&10%
Wr't Sunk Flush, Sargent's list...55&10%
Wr't Sunk Flush, Stanley's list...50&10%
Wr't B.K.Flush. Com'n " ....55&10%

Stove and Plow—
Stove.....60%
Plow.....60&5%
R. B. & W., Plow.....55%

Tire—
Common, list Feb. 28, '83.....65%
Port Chester Bolt and Nut Company:
Empire. list Feb 28, '83.....65%
Keystone, Philadel., list Oct. '84...80%
Norway, Phila., list Oct. '84.....75%
American Screw Company:
Norway, Phil., list Oct. 16, '84.....75%
Eagle, Phil., list Oct. 16, '84.....80%
Philadel., list Oct. 16, '84.....80%
Bay State, list Feb. 28, '83.....65%
R.B.&W., Philadel., list Oct. 16, '84...80%

Borers, Tap.

Common and Rind.....20&10%
Ive's Tap Borers.....33⅓&5%
Enterprise Mfg. Co.....20&10&30%
Clark's.....33⅓&35%
Borax.....₩ ℔ 9½@10½¢
Boring Machines—See Machines, Boring.
Bow Pins—See Pins, Bow.
Boxes, Wagon.
Per ℔.....2¾¢

Braces.—

American Bit Brace Co.:
Nos. 10, 12, 20.....60&10%
Nos. 11, 21, 24, 27.....70&10%
Nos. 22, 23, 25.....60&10&5%
Nos. 13, 26, 30, 37.....70&10&5%
Ball Braces, net.....$1.12 to $1.25
Amidon's
Barker's Imp'd Plain.....75&10@80%
Barker's Imp. Nickeled....65&10@70%
Ratchet.....75&10@80%
Eclipse Rachet.....60%
Globe Jawed.....40@40&10%
Corner Brace.....40@40&10%
Universal, 8 in., $2.10 10 in.....$2.25
Buffalo Ball.....$1.10@$1.15
Barber's,
Nos. 10 to 16.....50%
Nos. 30 to 33.....50%
Nos. 40 to 63.....50&10%
Saxton's,
Barker's Imp. Polished.....75&10@80%
Barker's Imp. Nickeled.....65&10@70%
Ratchet, Polished.....50&10@60%
Ratchet, Nickeled.....40&10@50%
Buffalo Ball.....net, $1.10@$1.15
Bartholomew's,
Nos. 25, 27 and 30.....50&10@60&5%
Nos. 117, 118, 119.....70@70&5%
Common Ball, American.....$1.00@$1.10
Fray's Genuine Spofford's..50&5&50&10%
Fray's No. 70 to 120, 81 to 123, 207 to 414.....50&10%
Ives' New Haven Novelty.....70@70&5%
New Haven Ratchet.....60&5@60&10%
Barber Ratchet.....60&5@60&10%
Barbers.....60&5%
Spofford.....60&5@60&10%
Osgood's Ratchet.....40&10&50%
P. S. & W. Co., Peck's Patent.....60%

Brackets

Shelf plain, Sargent list, 55&10@55&10&10%
Shelf, fancy, Sargent's list, 60&10@60&10&10%
Reading, plain.....50&10@60&10&5%
Reading, Rosette.....60&10@60&10&10%

Bright Wire Goods—See Wire.

Broilers—

Henis' Self-	Inch.....	9	10	9x11
Basting.	Per doz	$4.50	5.50	6.50

New Haven.....50%

Buckets, Well.

Galvanized—
Hill's.....₩ doz, 12 qt, $4.25; 14 qt, $5.25
Iron Clad.....₩ doz, 14 qt, $4.25@$4.50
Helwig's Flat Iron Band.....$3.75
Helwig's Wired Top.....₩ doz $4.00

Bull Rings—See Rings, Bull.

Butchers' Cleavers—See Cleavers Butchers'.

Butts—

Brass—
Wrought Brass.....75&10@80%
Cast Brass, Tiebout's'.....50%
Cast Brass, Corbin's, Fast.....33⅓&10%
Cast Brass, Loose Joint.....33⅓&10%

Cast Iron—
Fast Joint, Narrow.....60&10&5@60%
Fast Joint, Broad.....50&10@60%
Loose Joint.
Loose Joint, Japanned.
Loose Joint, Jap. with Acorns..
Parliament Butts. ..70&10 @ 75%
Mayer's Hinges.
Loose Pin, Acorns.
Loose Pin, Acorns, Japanned...
Loose Pin, Acorns, Japanned, Plated Tips.

Wrought Steel—
Fast Joint, Narrow.
Fast Joint, Lt. Narrow.
Fast Joint, Broad.
Loose Joint, Broad. .70&10 @75%
Table Butts, Back Flaps, &c ....
Inside Blind, Regular.
Inside Blind, Light.
Loose Pin.
Bronzed Wrought Butts.....80

Calipers—See Compasses.

Calks, Toe—

Gautier, One Prong, Blunt.....5½@6¢
Burke's, One Prong, Blunt.....5½@6¢
Burke's, Two Prong, Blunt.....7¼@8¢
Burke's, One Prong, Sharp.....6½@7¢

Can Openers—See Openers, Can.

Cards—

Horse & Curry.....10&10&10&10%
Cotton.....10&10&10%
Wool.....10&10&10%

Carpet Stretchers—See Stretchers Carpet.

Carpet Sweepers—See Sweepers Carpet.

Cartridges—See Ammunition.

Casters—

Bed.... Brass....55@55&10%
Plate.... Others...60@60&10%
Shallow Socket....
Deep Socket.....40&10%
Yale Casters, list May, 1884...30&10@40%
Yale, Gem.....60@60&5%
Martin's Patent (Phœnix).....45&10@50%
Payson's Anti-friction.....60@60&10%
Giant Truck Casters.....30%
Stationary Truck Casters.....50&10%
Socket Truck Casters.....50%

Cattle Leaders—See Leaders, Cattle.

Cement.

Victor Elastic.....5 ℔ pails ₩ ℔ 5¢

Chain—

Trace, Wagon and Fancy Chains, List revised April 21, 1890.....50& 10@60%

American Coil, in cask lots,	3-16	¼	5-16	⅜	7-16	½	⅝	¾
	$7.75	5.45	4.55	4.00	3.65	3.50	3.40	3.30

Less than cask lots, add ¼¢@½¢ ₩ ℔.
German Coil, list Oct. 6, 1890.....50&10&5@60%
German Halter Chain, list Oct. 6, 1890.....50&10&5@60%
Covert Halter.....60&2%
Covert Traces.....35@2%
Covert Heel Chain.....50&2%
Oneida Halter Chain.....60@60&5%
Galvanized Pump Chain.....₩ ℔ 5½@6¢
Jack Chain, Iron.....75&10@80%
Jack Chain, Brass.....75@75&10%

Chalk—

White.....₩ gr 50¢
Red.....₩ gr 70¢
Blue.....₩ gr 85¢
See also Crayons.

Chalk Lines—See Lines.

Chisels—

Socket Framing and Firmer.
P. S. & W.
New Haven.
Witherby. }..75 @ 75&10
Mix.
Ohio Tool Co.
Douglass.....75@75&5%
Buck Bros.....30%
Merrill.....60&10@60&10&5%
L. & I. J. White.....30@30&5%

Tanged and Miscellaneous.
Tanged Firmers.....40&10@50%
Butchers'.....$4.75@$5.00
Spear & Jackson's.....$5 to $
Buck Bros.....30%
Cold Chisels, ₩ ℔.....15@16¢

Chucks–

Beach Pat.....each, $8.00.....20%
Morse's Adjustable,each, $7.00, 20@20&5%
Danbury.....each, $6.00, 30@30&5%
Syracuse, Bals Pat.....25%
Graham Patent.....33⅓%
Skinner's Patent Chucks.
Combination Lathe Chucks.....33⅓%
Universal Lathe Chucks.....40%
Independent Lathe Chucks.....40%
Drill Chucks.....15%
Union Mfg. Co.,
Victor.....$8.50, 25%
Combination.....40%
Universal.....40%
Independent.....40%

Churns.

Tiffin Union, each, 5 gal. $3.25; 7 gal., $3.75; 10 gal..$4.25.
McDermaid Star Barrel Churn, each, 6 gal., $2 60; 10 gal., $2.75; 15 gal., $3.00; 20 gal. $3.25.

Clamps–

R. I. Tool Co.'s Wrought Iron.....25%
Adjustable, Cincinnati.....15&10%
Adjustable, Hammers.....15%
Adjustable, Stearn's.....30@30&10%
Stearn's Adjustable Cabinet and Corner.....30@30&10%
Cabinet, Sargent's.....60%&10%
Carriage Makers', Sargent's.....70&10%
Carriage Makers', P., S. & W. Co. 40&10%
Eberhard Mfg. Co.....40&5@40&10%
Warner's.....40&10@40&10&5%
Saw Clamps, see Vises, Saw Filers'.
Carpenters', Cincinnati.....25&10%

Cleavers.

Butchers'.

Bradley's.....25@30%
L. & I. J. White.....20&5%
Beatty's.....40@40&5%
New Haven Edge Tool Co.'s.....40%
P., S. & W.....33⅓&5@33⅓&10%
Foster Bros.....30%
Schulte, Lohoff & Co.....40@40&5%

Clips–

Norway, Axle, ¼ & 5-16.....55&5&5%
2nd grade Norway Axle, ¼ & 5-16 65&5%
Superior Axle Clips.....66⅔&5&70%
Norway Spring Bar Clips, 5-16..60&5&5%
Wrought-Iron Felloe Clips.....₩ ℔, 5½¢
Steel Felloe Clips.....₩ ℔, 5¢
Baker Axle Clips.....25%

Cloth and Netting, Wire—See Wire, &c.

Cockeyes.....50%

Cocks, Brass.

Hardware list.....50&2%

Coffee Mills—See Mills, Coffee.

Collars, Dog, &c.

Medford Fancy Goods Co.....40&10%
Embossed, Gilt, Pope & Steven's list 30&10%
Leather, Pope & Steven's list.....40%
Brass, Pope & Steven's list.....40%
Chapman Mfg. Company.....50&10@60%

Combs, Curry.

Fitch's.....50&10@50&10&10%
Rubber, per doz $10.00.....20%
Perfect.....50%

Compasses, Dividers, &c.–

Compasses, Calipers, Dividers.70@70&10%
Bemis & Call Co.'s
Dividers.....60&5%
Compasses & Calipers.....50&5%
Wing and Inside or Outside.....50&5%
Double.....60%
(Call's Pat. Inside).....30%
Excelsior.....50%
J. Stevens & Co.'s.....25&10%
Starrett's
Spring Calipers and Dividers.....25&10%
Lock Calipers and Dividers.....25%
Combination Dividers.....25%

Coopers' Tools—See Tools, Coopers'.

Cord–

Sash.

Common.....₩ ℔ 10@11¢
Patent, good quality.....₩ ℔ 13@13½¢
White Cotton Braided, fair.....₩ ℔ 28¢
Common Russia Sash.....₩ ℔ 13½¢
Patent " " .....₩ ℔ 15¢
Cable Laid Italian Sash.....₩ ℔ 22@23¢
Indian Cable Laid " ".....₩ ℔ 13¢
Silver Lake–
A Quality, White, 50¢.....10&10&5%
A Quality, Drab, 55¢.....10&10&5%
B Quality, White, 50¢.....28@30%
B Quality, Drab, 55¢.....31@33%
C Quality, White (only).....26@27¢
Sylvan Spring, Extra Braided, White, 34¢
Sylvan Spring, Extra Braided, Drab..30¢
Semper Idem, Braided, White.....30¢
Egyptian, India Hemp, Braided.....25¢
Samson–
Braided, White Cotton, 50¢...30@30&5%
Braided, Drab Cotton, 55¢...30@30&5%
Braided, Italian Hemp, 55¢...30@30&5%
Braided, Linen, 80¢.....30@30&5%
Tate & Co. Braided Wire, ₩100 ft..... 54¢

Wire Picture.

Braided or Twisted.....75&10%

Corkscrews—See Screws, Cork.

Corn Knives and Cutters—See Knives, Corn.

Crackers, Nut–

Table (H. & B. Mfg. Co.).....40%
Blake's Pattern.....₩ doz $2.00, 10%
Turner & Seymour Mfg. Co.....50%

Cradles–

Grain.....50&5&2@50&10&2%

Crayons.

White Crayons, ₩ gr, 12¢@12½¢.....10%
D. M. Stewart Mfg. Co., Metal Workers, ₩ gr, $2.50.....25%
D. M. Stewart Mfg. Co., Rolling Mill, ₩ gr, $2.50.....25%
See also Chalk.

Crow Bars—See Bars, Crow.

Curry Combs—See Combs, Curry.

Curtain Pins—See Pins, Curtain

Cutters–

Meat.

Dixon's ₩ doz.....40&5%
Nos.... 1 2 3 4
$14.00 $17.00 $19.00 $20.00
Woodruff's ₩ doz.....40&5%
Nos.... 100 150
$15.00 $18.00
Hales Pattern ₩ doz.....70@70&5%
Nos.....11 12 13
$27.00 $33.00 $45.00
American.....30%
Nos..... 1 2 3 4 B 5
Each.....$5 $7 $10 $25 $50 $60
Enterprise.....30%
Nos.....10 12 22 32 42
Each.....$3 $2.50 $4 $6 $15
Great American Meat Cutter.....30%
Nos.....112 116 118 120 122
Each.....$2.00 $2.75 $3.00 $2.50 $4 00
Miles' Challenge ₩ doz.....45@45&10%
Nos..... 1 2 3
$22.00 $30.00 $40.00
Home No. 1.....₩ doz, $26.00, 55&10%
Draw Cut, each:
Nos..5 2 6 8
$50 $75 $80 $225.....20@25%
Great American.....30%
Beef Shavers (Enterprise).....20&10@30%
Little Giant.....50%
Chadborn's Smoked Beef Cutter, ₩ doz $66.00

Tobacco.

Champion.....20&10@30%
Wood Bottom.....₩ doz $5.00@$5.25
All Iron.....₩ doz $4.25
Nashua Lock Co.'s..₩ doz, $18.00 50@55%
Wilson's.....55%
Sargents's.....₩ doz, $24, 55&10%
Acme.....₩ doz $20.00, 40%

Washer.

Smith's Pat.....₩ doz $12.00, 20&10&10%
Johnson's.....₩ doz $11.00, 33⅓%
Penny's, ₩ doz Pol. $14; Jap'd, $16.00, 55%
Appleton's.....₩ doz $16.00, 60&10%
Bonney's.....30&10%
Cincinnati.....25&10%

Cutlery–

Pocket and Table.....Net prices
Wostenholm...New list in preparation

Dampers, &c–

Dampers, Buffalo.....40&10%
Buffalo Damper Clips.....40&10%
Crown Damper.....40%
Excelsior.....40&10%

Diggers, Post Hole, &c.–

Samson Post Hole Digger, ₩ doz $36.00, 25%
Fletcher Post Hole Augers, ₩ doz $36, 20%
Eureka Diggers.....₩ doz $12.50@14.00
Reed's.....₩ doz $8.00@9.00
Vaughan's Post Hole Auger, ₩ doz $13.00@14.00
Kohler's Little Giant.....₩ doz. $18.00
Kohler's Hercules.....₩ doz. 15.00
Kohler' New Champion.....₩ doz. $9.00
Schniedler.....₩ doz. $18.00
Ryan's Post Hole Diggers..₩ doz $24.00
Cronk's Post Bars, ₩ doz $60.00, 50&5@50&10%
Gibbs Post Hole Digger, ₩ doz $30.00, 50¢
Imperial, ₩ doz $15.....45%

Dividers–

See Compasses.

Dog Collars—See Collars, Dog, &c.

Door Springs—See Springs, Door.

Drawers.

Money, ₩ doz.....$18&$20

Drawing Knives—See Knives, Drawing.

Drills and Drill Stocks–

Blacksmiths'.....each $1.75
Blacksmiths' Self-Feeding, each $7.50,20%
Breast, P. S. & W.....40&10%
Breast, Wilson's.....30&5%
Breast, Millers Falls.....each $3.00, 25%
Breast, Bartholomew's....each $2.50, 25&10@40%
Ratchet, Merrill's.....20@20&5%
Ratchet, Ingersoll's.....25%
Ratchet, Parker's.....20@20&5
Ratchet, Whitney's.....20&10%
Retchet, Weston's.....20@25%
Ratchet, Moore's Triple Action...25@30%
Ratchet, Curtis & Curtis.....30%
Whitney's Hand Drill, Plain, $11.00; Adjustable, $12.00.....20&10%
Wilson's Drill Stocks.....10%
Automatic Boring Tools.....$1.75@$1.85

Twist Drills–

Morse.....50&10&5%
Standard.....50&10&5%
Syracuse (Metal list).....50&10%
Cleveland.....50&10&5%
Williams.....50&10&10%
New Process.....50&10&5%
Graham's Pat. Groove Shank 50&10&5%

Drill Bits.—See Augers and Bits.

Drill Chucks.—See Chucks.

Dripping Pans-See Pans, Dripping.

Drivers, Screw.

Douglas Mfg. Co.....20@20&10%
Disston's.....40%
Buck Bros.....30%
Stanley R. & L. Co.'s
Varnished Handles.....65&10%
Black Handles.....60&10%
Sargent & Co.'s
No. 1 Forged Blade.....60&10&10%
Nos. 20, 30 and 60.....66⅔&10&10%
P. S. & W.....70%
Knapp & Cowles:
No. 1.....60&20@70%
No. 2.....60&10&10@70&5%
No. 3.....60&5@60&10%
Nos. 4 and 00, Acme and Ideal..50@ 5@50&10&5%
Stearns'.....25&10&5%
Gay & Parsons.....35%
Champion.....25&10%
Clark's Pat.....30@33⅓%
Crawford's Adjustable.....50%
Ellrich's Socket and Ratchet..25@25@10%
Allard's Spiral, new list.....25%
Kolb's Common Sense ₩ doz $6.00,25&10%
Syracuse Screw-Driver Bits...30&30&5%
Screw-Driver Bits.....₩ doz. 50@75¢
Screw-Driver Bits, Parr's.....₩ gro $6.25
Fray's Hol. Hdle. Sets. No. 3. $12.00, 25@25&10%
P. D. & Co.'s all Steel.....50%
Cincinnati.....25&10%
Brace Screw Drivers.....25&10%
Buck Bros.' Screw-Driver Bits....

Egg Beaters.—See Beaters, Egg.

Egg Poachers.—See Poachers, Egg.

Electric Bell Sets.—See Bells, Electric.

Emery.—

	No. 4 to 46 gr.	No. 54 to 150 gr.	Flour, FF.
Kegs, ₩ ℔	4½¢	5 ¢	2½¢
½ kegs, ₩ ℔	4¾¢	5¼¢	2¾¢
¼ kegs, ₩ ℔	5 ¢	5½¢	3 ¢
10-℔ cans, 10 in case	6 ¢	6¼¢	5 ¢
10-℔ cans, less than 10	10 ¢	10 ¢	7½¢

Enameled and Tinned Ware—See Ware, Hollow.

Escutcheon Pins—See Pins, Escutcheon.

Escutcheons.

Door Lock....Same dis as Door Locks.
Brass Thread.....60@60&10%
Wood.....25%

Expanded Metal.

List No. 5.

Lathing.....10%
Fencing, Painted Sheets.....20%
Netting, Painted Sheets.....20%
Door Mats, Galvanized.....25%
Window Guards, Paneled.....15%
Tree Guards, Paneled.....15%

Fasteners, Blind–

Mackrell's, ₩ doz. $1.00.....20@20&10%
Van Sand's Screw Pat., $15 ₩ gr..60&10%
Van Sand's Old Pat., $15.00 ₩ gr..55&10%
Washburn's Old Pattern, ₩ gr.....$9.00
Merriman's.....new list
Austin & Eddy No. 2008 ₩ gr.....$9.00
Security Gravity, ₩ gr.....$9.00

Faucets.–

Fenn's.....40%
Bohren's Pat. Rubber Ball.....25%
Fenn's Cork Stops.....33⅓%
Star.....60%
Frary's Pat. Petroleum.....40&5&2%
B. & L. B. Co.
West's Lock, Open and Shut Key...50%
Star, Metal Plug, new list.....40%
Lockport, Metal Plug, reduced list..40%
Metallic Key, Leather Lined...60&10@ 60&10&10%
Cork Lined.....70&5&70&10%
Burnside's Red Cedar.....50%
Burnside's Red Cedar, bbl lots....50&10%
John Sommers'
Peerless Best Block Tin Key.....40%
IXL, 1st quality, Cork Lined.....50%
Diamond Lock.....40%
Perfection, Fla. Red Cedar.....50%
Goodenough Cedar.....50%
Boss Metallic Key.....50%
Reliable Cork Lined.....60%
Western Pattern Cork Lined.....50%
Self-Measuring
Enterprise, ₩ doz $50.00.....20&10%
Lane's, ₩ doz $36.00.....25&10%
Victor, ₩ doz $36.00.....25&10%

Felloe Plates—See Plates, Felloe.

Fifth Wheels.–

Derby and Cincinnati.....45&5%
Brewster.....50&5%

Files–

Domestic–

Nicholson Files, Rasps, &c.....60&10@60&10&5%
Nicholson (X. F.) Files.....25%
Nicholson's Royal Files (Seconds).....75% (extra prices on certain sizes)
Other makers, best brands60&10@60&20%
Fair brands.....60&10&10@70&5%
Second quality.....70&10@75&10%
Nicholson's Horse Rasps....60&10@60& 10&5%
Heller's Horse Rasps.....50&7½@50&10%
McCaffrey's Horse Rasps.....50&10%
Chelsea Horse Rasps, Hand Cut...50&10%

Imported–

Moss & Gamble....List, April 1, 1883, 15%
Butcher.....Butcher's list, 20%
Stubs.....Stubs list, 25@30%
Turton's.....Turton's list, 20@25%
Greaves' Horse Rasps..American list, 60%

Fixtures.

Grindstone–

Sargent's Patent.....70&10%
Reading Hardware Co.....30&10%
P., S. & W. Co.....50&10%

Fluting Machines—See Machines, Fluting.

Fluting Scissors—See Scissors, Fluting.

Fodder Squeezers—See Squeezers, Fodder.

Forks–

Hay, Manure, &c., Asso List.65&5@65&10%
Hay, Manure, &c., Phila. List 60@60&5%
Plated, see Spoons.

Frames–

Saw–

White Vermont.....₩ gro $9.00@10.00
Red, Polished and Varnished.....₩ doz $1.50, 25%

Screen, Window and Door–

Porter's Pat. Window and Door Frame. 33⅓&10%
Warner's Screen Corner Irons..33⅓@ 33⅓&10%
Stearns' Frames and Corners..25@25&10%

Freezers, Ice Cream–

White Mountain.....60@60&5%
Granite State.....65@65&5%
Arctic.....70@70&5%
American.....60%
Buffalo Champion.....65@65&5%
Shepard's Lightning.....65@65&5%
Gem.....65%
Blizzard.....70%
Double Action Crown.....60%
Crown.....60%
Star.....60%
Peerless and Giant.....60&10%
Zero and Pet.....65&10%
Boss.....65&10&10%
Keystone, P. D. & Co., each, $1.50.....20%

Fruit and Jelly Presses—See Presses, Fruit and Jelly.

Fry Pans—See Pans, Fry.

Funnels.

Gersdorff's Perfection, Standard and Globe; *Tin*, 1 gro., 10 %; 2 to 5 gro., 20 %; 5 to 10 gro.....30 %
Copper, 1 to 6 doz., 15 %; 6 to 12 doz., 20 %; over 12 doz.....25 %

Furnaces, Soldering.

Burgess No. 3 Gem, tin reservoir....$7.00
Burgess No. 3 Gem, copper reservoir, 8.50

Fuse—₩ 1000 ft

Common Hemp Fuse, for dry ground.$2.70
Common Cotton Fuse, for dry ground 2.85
Single Taped Fuse, for wet ground.. 3.85
Double Taped Fuse, for very wet gr. 4.85
Triple Taped Fuse, for very wet gr.. 5.60
Small Gutta Percha Fuse, for water. 7.50
Large Gutta Percha Fuse, for water.12.00

Gates, Molasses–

Stebbin's Pattern.....75&10&5@80%
Stebbin's Genuine.....60&10&10%
Stebbin's Tinned Ends.....40&10%
Chase's Hard Metal.....50&10%
Bush's.....20%
Lincoln's Pattern.....70@70&10%
Weed's.....20&10%
Boss, ₩ doz:
No. 1, $7; No. 2, $8; No. 3, $9; No. 4, $10.....60&10&10%

Gauges.

Marking, Mortise, &c.....60&10%
Starrett's Surface, Center and Scratch. 25&10%
Wire, low list.....10&10%
Wire, Wheeler, Madden & Co.....10%
Wire, Morse's.....25%
Wire, Brown & Sharpe's.....10@20%
Wire, P. S. & W. Co.....10&10%

Gimlets–

Nail and Spike.....50&10&5%
" Eureka " Gimlets.....40&10%
" Diamond " Gimlets.....₩ gr $5.00
Double Cut, Shepardson's.....45@45&5%
Double Cut, Ives'.....60@60&5%
Double Cut, Douglass'.....40&10%
" Bee," ₩ gr $12.....25@25&5%

Glue–

Le Page's Liquid.....25@25&5%
Upton's Liquid.....35%
The Le Page Co.'s Improved Process 25@25&5%

Glue Pots—See Pots, Glue.

Grease, Axle.

Fraser's.....Keg ₩ ℔ 4¢, Pail ₩ ℔ 5¢
Fraser's, in boxes.....₩ gr $9.50
Dixon's Everlasting, in bxs...₩ doz 1℔ $1.20; 2 ℔ $2.00
Dixon's Everlasting....10-℔ pails, ea. 85¢
Lower grades, special brands, ₩ gr $5.50@$7.00

Grindstones–

Small, at factory.....₩ ton $7.50@9.00

Grindstone Fixtures—See Fixtures, Grindstone.

Hack Saws—See Saws.

Hafts, Awl.

Sewing, Brass Fer..₩ gr, $3.50.....45&10%
Fat. Sewing, Short..$1.00 ₩ doz.....40&10%
Fat. Sewing, Long.....₩ doz $1.20
Fat. Peg, Plain Top..₩ gr $10.00.....45&10%
Fat. Peg, Leather Top..₩ gr $12.00.45&10%

Halters.

Covert's, Rope, ½-in. Jute..... 50&2%
Covert's, Rope, ½-in. Hemp.....50&2%
Covert's Adj. Rope Halters.....40&2%
Covert's Hemp Horse and Cattle Tie. 50&2%
Covert's Jute Horse and Cattle Ties, 60&10&2%
Covert's Adj. Web Halters.....35&2%

Hammers–

Handled Hammers–

Maydole's, list Dec. 1, '85.....25&10@35%
Buffalo Hammer Co.
Humason & Beckley
Atha Tool Co. } 50@50&10%
Fayette R. Plumb
C. Hammond & Son
Verree.....40%
Hartford, Nail Hammers...35&10@40 &5%
Hartford, Machinists, &c .....50@50& 10%
Magnetic Tack, Nos. 1, 2, 3, $1.25, 1.50 & 1.75.....30 &10%
Nelson Tool Works.....40 &10%
Warner & Nobles.....20 @25
Feck, Stow & Wilcox.....40%
Sargent's.....33⅓&10%

Heavy Hammers and Sledges–

3 ℔ and under..... ₩ ℔ 40¢
3 to 5 ℔..... ₩ ℔ 36¢ } 70@70&10%
Over 5 ℔..... ₩ ℔ 30¢
Wilkinson's Smiths.....10½¢@11¢₩ ℔

Handcuffs and Leg Irons—See Police Goods,

Handles–

Atkins' No. 1 Loop, ₩ pair, 28¢; No. 13¢; No. 6, 16¢; No. 2 and No. Reversible, 18¢.

Cross-Cut Saw Handles–

Boynton's Loop Saw Handles, 50¢.....60%
Champion.....15%

Iron, Wrought or Cast–

Door or Thumb.

Nos.....	0	1	2	3
Per doz....	$0.90	1.00	1.15	1.35

1.50 60&10&10

Roggin's Latches.....₩ doz 30@35%
Bronze Iron Drop Latches..₩ doz 70@ net
Jap'd Store Door Handles—Nuts, $1.62; Plate, $1.10; no Plate, $0.88 ..... net
Barn Door, ₩ doz $1.40..... 10&10%
Chest and Lifting.....70%

Wood—

Saw and Plane.....40&10@40&10&5%
Hammer, Hatchet, Axe, Sledge, &c...40%
Brad Awl.....₩ gr $2.00
Hickory Firmer Chisel, ass'd. ₩ gr 4.50 } 40&10%
Hickory Firmer Chisel, large. ₩ gr 5.00
Apple Firmer Chisel, ass'd... ₩ gr 5.00
Apple Firmer Chisel, large...₩ gr 6.00
Socket Firmer Chisel, ass'd.. ₩ gr 3.00
Socket Framing Chisel, ass'd. ₩ gr 5.00
J. S. Smith & Co.'s Pat File.....50-10%
File, assorted..... ₩ gr 2 75 } 50%
Auger, assorted.....₩ gr 5.00 }
Auger, large.....₩ gr 7.00 }
Pat. Auger, Ives'.....30&10%
Pat. Auger, Douglass..... ₩ set $1.25
Pat. Auger, Swan's..... ₩ set $1.00
Hoe, Rake, Shovel, &c. ....50&10%

Hangers—

Barn Door, old patterns...60&10&10@70%
Barn Door, New England...60&10&10@70
Samson Steel Anti-Friction.....55%
Orleans Steel.....55%
Hamilton Wrought Wood Track.....55%
U. S. Wood Track 65%
Champion.....50&10%
Rider and Wooster, Medina Mfg. Co.'s list.....70%
Climax Anti-Friction.....55%
Climax Anti-Friction for Wood Track55%
Zenith for Wood Track.....55%
Reed's Steel Arm.....50%
Challenge, Barn Door.....50%
Sterling's Imp'ved (Anti-Friction).65&10%
Victor, No. 1, $15.00; No. 2, $16.50; No. 3, $18.00..... .....50&2%
Cheritree .....50&10%
Kidder's .....50&10@60%
The Boss.....60&10%
Best Anti-Friction.....60&10%
Duplex (Wood Track).....60&10&5%
Terry's Pat., ₩ doz pr. 4 in, $10.00; 5 in. $12.00.....50&10%
Terry's Steel Anti-Friction Leader 50&10%
Terry's Steel Anti-Friction Ideal..50&10%
Cronk's Patent, Steel Covered.....50&5%
Wood Track Iron Clad, ₩ ft. 10¢.....50 &15@60%
Carrier Steel Anti-Friction.....50&10%
Architect, ₩ set $6.00..... .....20%
Eclipse.....20&10%
Felix, ₩ set $4.50.....20%
Richards'.....30@30&10%
Lane's Standard.....50&5@50&10%
Lane's New Standard.....50@50&5%
Ball Bearing Door Hanger..20&10@25&10%
Warner's Pat.....20&10@20@10&10%
Stearns' Anti-Friction.20&10@20&10&10%
Stearns' Challenge.....25&10@25&10&10%
Faultless.....40@40&5%
American, ₩ set $6.00..... .....20&10%
Rider & Wooster, No. 1, 62½¢; No. 2, 75¢.....40%
Paragon, Nos. 1, 2 and 3.....40&10%
Cincinnati.....25&10%
Paragon, Nos. 5, 5¼, 7 and 8.....20&10%
Crescent.....60@60&10%
Nickel Cast Iron.....50%
Nickel, Malleable Iron and Steel 40%
Scranton Anti-Friction Single Strap33⅓&5
Wild West, 4 in. Wheel, $15.00; 5 in. Wheel, $21.00.....45%
Star.....40&10@40&10&5%
May .....50&5@50&10%
Barry, $6.00..... .....40&10%
Interstate.....50%
Magic.....45%

Harness Snaps—See Snaps.

Hatchets—

American Axe and Tool Co.
Blood's.....
Hunt's.....
Hurd's.....
Mann's.....
Peck's.....
Underhill's..... } 40 & 10 @ 50&5 %
Buffalo Hammer Co.....
Fayette R. Plumb.....
C. Hammond & Son... .....
Kelly's.....
Sargent & Co.....
P., S. & W. Co.....
Ten Eyck Edge Tool Co.....
Collins.....10%
Schulte, Lohoff & Co.....50@50&5%

Hay and Straw Knives—See Knives.

Hinges—

Blind Hinges—

Parker.....75&2%
Palmer.....50&5&10%
Seymour.....70&2%
Huffer 50%
Clark's, Nos. 1, 3, 5, 40 and 50 ..... 75&10&5@80%
Clark's Mortise Gravity.....50%
Sargent's, Nos. 1, 3, 5, 11, 13 ..... 75&10@55&10&5%
Sargent's, No. 12.....77&10&10%
Reading's Gravity.....75&10@75&10&5%
Shepard's
Noiseless.....75&10%
Niagara.....80%
Buffalo.....80%
Clark's Genuine Pattern.....80%
O. S., Lull & Porter.....75&10%
Acme, Lull & Porter.....75%
Queen City Reversible....70&10&5@75%
Clark's Lull & Porter, Nos. 0, 1, 1½, 2, 2½, 3.....75&10&2½%
North's Automatic Blind Fixtures, No. 2, for Wood, $8.00; No. 3, for Brick, $11.50. .....10%

Gate Hinges—

Western.....₩ doz $4.40, 60%
N. E.....₩ doz $7.00, 55%
N. E. Reversible.....₩ doz $5.20, 55&10%
Clark's, Nos. 1, 2, 3.....60&10&5%
N. Y. State.....₩ doz $5.00, 55&10%
Automatic .....₩ doz $12.50, 50%
Common Sense.....₩ doz pair $4.50, 50%
Seymour's..... 45&10%
Shepard's .....60&10&5%
Reed's Latch and Hinges. ₩ doz $12.00, 50%

Spring Hinges—

Union Spring and Blank Butts.....40%
Gear's Spring Hinge Co.'s list, March 1886 ....20%
Acme.....30%
J. S.....25&10%
Empire and Crown.....20%
Hero and Monarch 55%
American, Gem, and Star.....20%
Oxford.....20%
Barker's Double Acting..... ... 25%
Union Mfg. Co.....25%
Bommer's.....30%
Suckman's.....15@20%
Chicago.....30%
Wiles'.....10%
Devore's.....40%
Rex.....40%
Royal.....60%
Reliable.....60%
Champion.....60%
Bardsley's Patent.....40%
Stearn's.....50&10%
Niagara, Holdback pattern, per gross.....$14.00

Wrought Iron Hinges

Strap and T.....75&10%
Corrugated Strap and T.....75 & 10 %
Screw Hook and Strap..... { 6 to 12 in., ₩ ℔. 4¢ / 14 to 20 in., ₩ ℔.3½¢ / 22 to 36 in., ₩ ℔. 3¢
Screw Hook and Eye.... { ⅜ in., ₩ ℔ 7¾¢ / ½ in., ₩ ℔ 5½¢ / ⅝ in., ₩ ℔ 4¾¢
Rolled Blind Hinges, Nos. 32 and 34 50&10%
Rolled Blind Hinges, Nos. 232 and 234 55&10%
Rolled Plate.....70&10%
Rolled Raised.....70&10%
Plate Hinges (8, 10 & 12 in., ₩ ℔.....5¢
"Providence" { over 12 in., ₩ ℔.....4¢

Hoes—

Eye—

D. & H. Scovil.....20%
Lane's Crescent Planters Pattern..45&5%
Lane's Razor Blade, Scovil Pattern...30%
Maynard, S. & O. Pat.....45&5%
Sandusky Tool Co., S. & O. Pat. / Am. Axe and Tool Co., S. & O. Pat..... } 50&10&5 @60%
Chattanooga Tool Co., S. & O. Pat..60& 5@60&10%
Grub.....60&10%

Handled—

Garden, Mortar, &c.....65&5@65&10%
Planter's, Cotton &c.....65&5@65&10%
Warren Hoe.....60%
Magic .....₩ doz $4.00

Hog Rings and Ringers—See Rings and Ringers.

Hoisting Apparatus—See Machines, Hoisting.

Hollow-Ware—See Ware, Hollow.

Holders.

Bag.

Sprengle's Pat.....₩ doz $18.....60%

Bit.

Extension,
Barber's, ₩ doz $15.00.....40@40&10%
Ives, ₩ doz $20.00.....60&5@60&10%
Diagonal.....₩ doz $24.00, 40%
Angular.....₩ doz $24.00, 40&5%

File and Tool—

Bals Pat.....₩ doz $4.00; 25%
Nicholson File Holders..... 20%
Dick's Tool Holder..... 20%

Hooks—

Cast Iron—

Bird Cage, Sargent's list.... / Bird Cage, Reading..... / Clothes Line, Sargent's list.. } 60&10&10%
Clothes Line, Reading list. 60&10@60&10&10%
Ceiling Sargent's list.....55&10&10%
Harness, Reading list..55&10@55&10&10%
Coat and Hat, Sargent's list. 55&10@60&10%
Coat and Hat, Reading.50&10@50&10&10%

Wrought Iron—

Cotton.....₩ doz $1.25
Cotton Pat. (N.Y. Mallet & Handle W'ks). 30%
Tassel and Picture (T. & S. Mfg. Co.)...50%
Wrought Staples, Hooks, &c. See Wrought Goods.

Wire—

Wire Coat and Hat, Gem, list April, 1886.....50%
Wire Coat and Hat, Miles', list April, 1886.....50%
Indestructible Coat and Hat.....45%
Wire Coat and Hat, Standard.....60%
Handy Hat and Coat.....50&10%
Steady Ceiling Hooks.....50&10%
Belt.....80@80&10%
Atlas, Coat and Hat.....60%

Miscellaneous.

Grass, No. 2, $2.00: No. 3, $2.25; No. 4, $2.50
Nolin's Grass.....₩ doz $2.25
Bush.....55@60%
Whiffletree—Patent.....55%
Hooks and Eyes—Malleable Iron. 70@70&10%
Hooks and Eyes—Brass.....60&10@10%
Fish Hooks, American.....50%
Bench Hooks .....See Bench Stops.

Horse Nails—See Nails, Horse.

Horse Shoes—See Shoes, Horse.

Hose, Rubber—

Competition.....75@75&5%
Standard.....60&10&5@50&10&10%
Extra..... 50&10@60%
N. Y. B. & P. Co., Para..... .....25&5%
N. Y. B. & P. Co., Extra..... 10@40&5%
N. Y. B. & P. Co., Dundee....50&10 @ 60%

Huskers—

Blair's Adjustable..... ..₩ gr $8.00
Blair's Adjustable Clipper.. ..₩ gr 7.00
Hubbard's Solid Steel.....₩ gr 4.50

Indurated Fiber-Ware—See Ware, Indurated Fiber.—

Irons.

Sad—

From 4 to 10, at factory....₩ 100 ℔. $2.30@$2.40
Self-Heating.....₩ doz $9.00 net
Self-Heading, Tailors'....₩ doz $18.00 net
Mrs. Pott's Irons..... .....50&5%
Enterprise Star Irons..... .....50&5%
XX Cold Handle Sad Irons ....50&5%
Ideal Irons new list.50&10@50 & 10&10%
Salamander, Irons..... .....25%
B. B. Sad Irons, ₩ ℔..... .....3 @3¼¢
Combined Fluter and Sad Iron, ₩ doz, $15.00..... .....15%
Fox Reversible, Self-Fluter ₩ doz $24.00
Chinese Laundry (N.E. Butt Co.) 8½¢, 15%
New England..... .....6¢, 15%
Mahony's Trov Pol. Irons..... .....25%
Sensible, list Jan. 91..... .....50&10&5%
Sensible Tailor's Irons..... .....33⅓ %
National Self-Heating..... .....30 %

Soldering—

Soldering Coppers.....₩ ℔ 22 @ 23¢
Covert's Adjustable, list Jan. 1, 1886. 35&2%

Irons, Pinking, per doz., 65¢.

Jack Screws—See Screws.

Jacks, Wagon.

Daisy..... .....33⅓%
Victor..... .....33⅓%

Kettles— Spun. Stamped.
Brass, 7 to 17 in., ₩ ℔.... 24¢ 22 ¢
Brass larger than 17 in., ₩ ℔..... 26¢ 24½¢
Enameled and Tea—See Hollow Ware.

Keys—

Lock Asso'n list Dec. 30, 1886...50&10@ 60&5%
Eagle, Cabinet, &c.....33⅓&2%
Hotchkiss' Brass Blanks.....40%
Hotchkiss, Copper and Tinned.....40%
Hotchkiss' Pad. and Cab.....35%
Ratchet Bed Keys.....₩ doz $4.00, 15%
Wollensak Tinned.....50&10%

Knife Sharpeners—See Sharpeners, Knife.

Knives.

Butcher, Shoe, &c—

Wilson's list Oct. 1, 1890 .....25%
Ames' Butcher Knives.....25%
Foster Bros.' Butcher, &c..... ...40%
Nichols' Butcher Knives.....40&10%
Ames' Shoe Knives.....20@25%
Ames' Bread Knives. ₩ doz $1.50, 15@20%
Moran's Shoe and Bread.....20%
Hay and Straw .....See Hay Knives.
Table and Pocket .....See Cutlery.
Corn, Auburn Mfg. Co. Western Pat., $2.00
Corn, Auburn Mfg. Co. Crescent.....$3.50

Corn—

Bradley's..... .....10%
Wadsworth's..... .....25%

Drawing—

Witherby..... / P. S. & W ..... / Mix ..... / New Haven..... } ..75 @ 75&10 %
Merrill .....60&10@60&10&5%
Douglas.....75@75&5%
Watrous.....15&10@25%
L. & I. J. White.....20&5%
Bradley's.....35%
Adjustable Handle.....25@33⅓%
Wilkinson's Folding.....25@25&5%

Hay and Straw—

Lightning, Mfrs'. price ₩ doz $18.00, 25% But jobbers cut this price freely, often selling at $8 @ $8.50.
Wadsworth's.....40&7½@40&10%
Carter's Needle.....₩ doz $11.00@$11.50
Heath's.....₩ doz $13.00@13.50
Auburn Hay, Com. and Spear Point..50%
Auburn, Straw.....40%
Nolin's Hay .....₩ doz.$7.00 @ $8.00

Mincing.

Am. (2d quality), ₩ gr., 1 blade, $7; 2 blades, $12; 3 blades, $18.....net
Lothrop's..... .....20&10%
Smith's, ₩ doz, Single, $2.00; Double, $3 40@45%
Knapp & Cowles.....50&10@60%
Buffalo Adjustable.....₩ doz $3.00 ,25%
Buffalo Double Adj'table.₩ doz $3.00 25%

Knobs—

Door Mineral.....60@65%
Door Por. Jap'd.....70@75%
Door Por. Nickel.....$2.00@2.25
Door Por. Plated, Nickel.....$2.00@2.25
Drawer, Porcelain....60@60@60&10&10%
Hemacite Door Knobs.....40&10@50%
Yale & Towne Wood, list Dec., 1885...40%
Furniture Plain.....75¢ gro inch, 10%
Furniture, Wood Screws.....25&10%
Base, Rubber Tip.....70&10&5%
Picture, Judd's.....60&10&10@70%
Picture, Sargent's.....70&10%
Picture, Hemacite.....35&5%
Shutter, Porcelain.....65&10%
Carriage, Jap.....₩ gro 80¢, 60&10%
Bardsley's Wood Door, Shutter, &c..40%

Ladles.—
Melting, Sargent's.....55&10%
Melting, Reading.....35&10%
Melting, Monroe's Pat..₩ doz $4.00, 40%
Melting, P. S. & W .....35&10@40%
Melting, Warner's.....30%

Lanterns—

Tubular—

Plain with Guards, ₩ doz.....$4.00@4.25
Lift Wire, with Guards.....$4.50@4.75
Square Plain, with Guards....$4.00@4.25
Sq. Lift Wire, with Guards....$4.25@4.50
Without Guards, 25¢ ₩ doz less.

Miscellaneous.

Police, Small, $6.00; Medium, $7.25; Large, $9.75..... .....20@25%

Lawn Mowers—See Mowers, Lawn.

Leaders, Cattle.

Humason. Beckley & Co.'s.....70%
Sargent's.....60%&10%
Hotchkiss..... .....30%
Peck, Stow & W. Co..... .....60&10%

Lemon Squeezers—See Squeezers, Lemon.

Lifters, Transom.

Wollensak's:
Class 3 and 4, Bronzed Iron.....50%
Class 3 and 4, Bronze Metal.....25%
Class 3 and 4, Brass.....35%
Skylight Lifters.....25%
Crown, Eagle and Shield.....50%
Reiher's, list Sept. 1, 1890.
Bronzed Iron Rods.....50&10&10&2½
Brass, Real Bronze or Nickel Plate..30%
Excelsior.....50&10&2½
Shaw's..... .....50&10%
Payson's:
Universal..... .....60%
Solid Grip.....60%
Imperial.....60&10%

Lines—

Cotton and Linen Fish, Draper's.....50%
Draper's and Tate's Chalk.....60%
Draper's Masons' Linen, 84 ft., No. 1, $1.25; No. 2, $1.75; No. 3, $2.25; No. 4, $2.75; No. 5, $3.25.....25%
Cotton Chalk.....55%
Samson, Cotton, No. 4, $2; No. 4½, $2.50; 10%
Silver Lake, Braided, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50 ₩ gro.....25%
Mason's Linen, No. 3½, $1.50; No. 4, $2.00; No. 4½, $2.50.
Mason's Colored Cotton..... .....45%
Wire Clothes.. Nos. 18 19 20
100 ft. $4 00 $3 50 $3.00
Ventilator Cord, Samson Braided, White or Drab Cotton..₩ doz $7.50, 20%

Locks, &c.—

Cabinet—

Eagle, Gaylord Parker and Corbin... } List March, '84, rev Jan.1,'85..33⅓&2%
Deitz, Nos. 36 to 39.....40%
Deitz, Nos. 51 to 63.....40&10%
Deitz, Nos. 86 to 96.....30%
Stoddard Lock Co.....30&33⅓&
"Champion" Night Latches.....40%
Barnes Mfg. Co.....40@40&10%
Eagle and Corbin Trunk.....25&2%
"Champion" Cab. and Combin...33⅓&
Yale.....net prices
Romer's.....25%

Door Locks, Latches, &c.

R. & E. Mfg. Co. ,list Mar.20, 1889..... } 65&10@70 Much lower net prices often made.
Mallory, Wheeler & Co., list July, '88.....
Sargent & Co.,list Aug.1, '88
Reading Hardware Co., list Feb. 2, '88.....
Brittan, Graham & Mathes, list Jan. 1890.....60&10&10%
Perkins' Burglar Proof.....60&25%
Plate.....33⅓&2%
Barnes Mfg. Co.....40@40&10%
Yale.....net prices
Deits Flat Key.....30%
L. & C. Round Key Latches.....30&10%
L. & C. Flat Key Latches.....33⅓&10%
Romer's Night Latches.....15%
Shepardson or U. S.....35%
Seed's N. Y. Hasp Lock..... .....25%

Padlocks—

List Dec. 23, '84. .....75&10%
Brittan, Graham & Mathes.....75&10%
Yale Lock Mfg. Co.'s.....net prices
Eagle.....25&2%
Eureka, Eagle Lock Co.....40&2%
Romer's, Nos. 0 to 91.....30%
Romer's Scandinavian, &c., Nos. 100 to 505..15%
A. E. Deits.....40%
Champion Padlocks.....40%
Hotchkiss.....30%
Star.....45%
Horseshoe.....₩ doz, $9. 40@40&10%
Barnes Mfg. Co.....40@40&10%
Nock's.....30%
Brown's Pat..... .....25%
Scandinavian..... .....90@90&10%
E. T. Fraim's Keystone Scandavian: Nos. 119, 120, 130 and 140... ...90&10%
Other Nos. 65%
Ames Sword Co. up to No. 150.....40%
Ames Sword Co. above No. 150.....50%
Slaymaker Barry & Co.
No. 41 line.....45&5%
No. 31 line.....60&5%
No. 21 line.....75@5%

Sash, &c.

Clark's, No. 1, $10 ; No. 2, $8 ₩ gr. .33⅓&
Ferguson's..... .....33⅓&
Morris and Triumph, list Aug. 16, 1886, 60&2%
Victor.....60&10&2%
Walker's..... .....10%
Attwell Mfg. Co.....25&33⅓&
Reading.....66⅔&10@66⅔&10&10%
Hammond's Window Springs.....40%
Common Sense, Jap'd, Cop'd and Br'zed.....₩ gr $4.00
Common Sense, Nickel Plated ₩ gr $10.00
Universal..... .....30%
Kempshall's Gravity.....60%
Kempshall's Model.....60@60&10%
Corbin's Daisy, list Feb. 15, 1886.....70%
Payson's Perfect.....60@60&10%
Hugunin's Sash Balances.....25&5&2%
Hugunin's New Sash Locks.....25&5&2%
Stoddard "Practical". 10%
Ives' Patent.....60&10@60&10&5%
Lieschе's, Nos. 100 and 110, ₩ gr $8 ; 105, $10.00..... .....20&10%
Davis, Bronze, Barnes Mfg. Co.....50%
Champion Safety, list March 1, 1888 55@55&5%
Security.....70%
Buckeye.....₩ gro $4.80

Lumber Tools—See Tools, Lumber

Lustro—

Four-ounce Bottles....₩ doz, $1.75; ₩ gross..... .....$17.00

Machines.

Boring—

	Without Augers.	Upright.	Angular.
Douglas	$5.50	$6.75	.....50%
Snell's, Nice's Pat.	5.50	6.75	.40&10&10%
Jennings	5.50	6.75	.45@45&10%
Other Machines...	2.35	2.75	.....
Phillips' Patent with Augers ...	7.00	7.50	.....

Fluting.

Knox, 4½-inch Rolls .....$3.25 each } 35%
Knox, 6-inch Rolls.....$3.60 each }
Eagle, 3½-inch Roll, $2.15..... .....35%
Eagle, 5½-inch Roll, $2.85..... .....35%
Crown, 4½ in., $3.50; 6 in., $4.00; 8 in., $6.50 each 35%
Crown Jewel, 6 in .....$3.50 each, 35%
American, 5 in., $3.00; 6 in., $3.40; 7 in., $4.50 each.....35%
Domestic Fluter .....each, $1.50
Geneva Hand Fluter, White Metal ₩ doz $12, 25%
Crown Hand Fluter, Nos. 1, $15.00; $12.50; 3, $10.00..... .....30%
Shepard Hand Fluter, No. 85 ₩ doz 15 20 ....40%

Snepard Hand Fluter, No. 110 ₱ doz $11.00 ..... 40%
Shepard Hand Fluter, No. 95 ₱ doz $8.00 ..... 40%
Clark's Hand Fluter, ₱ doz $15.00 ..... 35%
Combined Fluter and Sad Iron, ₱ doz $15.00 ..... 30%
Buffalo ..... ₱ doz $10.00 ..... 10%

Hoisting—
Moore's Hand Hoist, with Lock Brake 20%
Moore's Differential Pulley Block 40%
Energy Mfg. Co's 25%

Washing—
Anthony Wayne, ₱ doz No. 1, $51; No. 2, $45; No. 3, $42.

Mallets.
Hickory ..... 20&10@20&10&10%
Lignumvitæ ..... 20&10@20&10&10%
B. & L. Block Co., Hickory & L. V. ..... 30@30&10%

Mattocks. Regular list. ..... 60&10@60&10&5%

Measures—
Standard Fiberware, No. 1, peck, ₱ dozen, $4; ½-peck, $3.50.

Meat Cutters—See Cutters, Meat.

Mills.

Coffee—
Box and Side, List Jan. 1, 1888 ..... 60&2%
American, Enterprise Mfg Co. ..... 20&10@30%
The Swift, Lane Bros. ..... 20&10%

Mincing Knives — See Knives, Mincing.

Molasses Gates—See Gates, Molasses.

Money Drawers — See Drawers, Money.

Muzzles—
Safety ..... ₱ doz, $3.00, 25%

Nails.

Cut and Wire. See Trade Report.
Wire Nails, Papered.
Association list, July 15, '89 ..... 75&10%
Tack Mfrs.' list 70%
Wire Nails, Standard Penny.
Card June 1, '89, base ..... $2.35 @ $2.45

Horse—See Trade Report.

Nos.	6	7	8	9	10	
Ausable	.28¢	26¢	25¢	24¢	23¢.	40&5&2%
Clinton, Fin.	.19¢	17¢	16¢	15¢	14¢	30%
Essex	.28¢	26¢	25¢	24¢	23¢.	25&10@25&10&10%
Lyra	.19¢	17¢	16¢	15¢	14¢	30%
Snowden	19¢	17¢	16¢	15¢	14¢	30%
Putnam	.23¢	21¢	20¢	19¢	18¢.	1000 ₱ in year 15%
Vulcan	.23¢	21¢	20¢	19¢	18¢.	12½&5%
Northwest'n	.25¢	23¢	22¢	21¢	20¢.	25@25&5%
Globe	.23¢	21¢	20¢	19¢	18¢.	25&10%
Boston	.23¢	21¢	20¢	19¢	18¢.	20&5&5&2½%
A. C	.25¢	23¢	22¢	21¢	21¢.	25&10@33⅓&5%
C. B.-K	.25¢	23¢	22¢	21¢	21¢.	25&10@33⅓&5%
Maud S	.25¢	23¢	22¢	21¢	21¢.	40&10%
Champlain	.28¢	6¢	25¢	24¢	23¢.	25&10&10%
New Haven	.28	26¢	25¢	24¢	23¢.	25&10@25&10&10%
Saranac	.23¢	21¢	20¢	19¢	18¢.	.30&10%
Champion	.25¢	23¢	22¢	21¢	20¢.	10&10&10%
Capewell	.28¢	26¢	5¢	24¢	23¢.	35&5@35&10%
Star	.23¢	21¢	¥¢	19¢	18¢.	10&10@10&12½%
Anchor	.23¢	21¢	20¢	19¢	18¢	.35%
Western	.23¢	21¢	20¢	19¢	18¢	.40&10%
Empire Bronzed						.14 ₱ ₱.

Picture—
Brass Head, Sargent's list ..... 50&10&10%
Brass Head, Combination list ..... 50&10%
Porcelain Head, Sargent's list. 50&10&10%
Porcelain Head, Combination list. 40&10%
Niles' Patent 40%

Nail Pullers.—See Pullers, Nail.

Nail Sets.—See Sets, Nail.

Nut Crackers.—See Crackers, Nut.

Nuts—
Nuts, off list Dec. 18, 1889: Square, Hex.
Hot Pressed ..... 5.25¢ 5.85¢
Cold Punched ..... 4.95¢ 5.05¢
In packages of 100 ₱, add 1-10¢ ₱ ₱, net: in packages less than 100 ₱, add ½¢ ₱ ₱, net.

Oakum—
Government ..... ₱ ₱ 7@7½¢
U. S. Navy ..... ₱ ₱ @6½¢
Navy ..... ₱ ₱ 5½¢@5½¢

Oilers—
Zinc and Tin ..... 65&10@70%
Brass and Copper ..... 50&10@50&10&5%
Malleable, Hammers' Improved, No. 1, $3.60; No. 2, $4.00; No. 3, $4.40 ₱ doz. 10&10&5%
Malleable, Hammers, Old Pattern, same list 40%
Prior's Pat. or "Paragon" Zinc, 60&10&10%
Prior's Pat. or "Paragon" Brass 50%
Olmstead's Tin and Zinc 60%
Olmstead's Brass and Copper 50%
Broughton's Zinc 60%
Broughton's Brass 50%
Gem P. D. & Co. ..... ₱ gro. $2
Steel, Draper and Williams 50%

Openers, Can.
Messenger's Comet ..... ₱ doz $3.00, 25%
American ..... ₱ gross $3.00
Duplex ..... doz 25¢, 15@20%
Lyman's ..... ₱ doz $3.75, 20%
No. 4 French ..... ₱ doz $2.25, 55&60%
No. 5, Iron Handle ..... ₱ gr $6.00, 45@50%
Eureka ..... ₱ doz $2.50, 10%
Sardine Scissors ..... ₱ doz $2.75@3.50
Star ..... ₱ doz $2.75
Sprague, No. 1, $2.00; 2, $2.25; 3, $2.50; 50&10&10%
Excelsior No. 1 $2.50; No. 2, $1.50 ..... 40%
World's Best, ₱ gross, No. 1, $12.00; No. 2, $24.00; No. 3, $36.00 ..... 50&10%
Universal, ₱ doz $3.00 ..... 50&5%
Domestic, ₱ doz $2.50 ..... 45%
Champion ₱ doz $2.00 ..... 50%

Packing, Steam—

Rubber—
Standard ..... 60&5@65%
Extra ..... 50@50&5%
N. Y. B. & P. Co., Standard ..... 40&10@50%
N. Y. B. & P. Co., Empire ..... 60&5@65%
N. Y. B. & P. Co., Salamander. ₱ ₱ 65¢, 10@15%
Jenkins' Standard. ₱ ₱ 80¢, ... 25@25&5%

Miscellaneous—
American Packing ..... 10¢@11¢ ₱ ₱
Russia Packing ..... 14¢ ₱ ₱
Italian Packing ..... 13¢@14¢ ₱ ₱
Cotton Packing ..... 15¢@17¢ ₱ ₱
Jute ..... 7¢@8¢ ₱ ₱

Padlocks—See Locks.

Pails.

Galvanized Iron—

Quarts	10	12	14
Hill's Light Weight, ₱ doz.	$2.75	3.00	3.25
Hill's Heavy Weight, ₱ dz.	3.00	3.25	3.75
Helwig's	2.50	2.75	3.00
sidney Shepard & Co.	2.35	2.85	3.05
Iron Clad	2.50	2.75	3.00
Fire Buckets	2.75	3.25	3.50

Buckets, see Well Buckets. add 6% dis 10%

Indurated Fibre Ware—25%
Star Pails, 12 qt ..... ₱ doz $6.00
Fire, Stable and Milk, 14 qt .. ₱ doz $7.80

Standard Fibre Ware—

	Plain.	Decr'd
Water Pails, 12 qt., per doz.	$4.00	$4.50
Dairy Pails, 14 qt., per doz.	4.50	5.00
Fire Pails, No. 1, 12 qt. per doz	4.50	
Fire Pails, No. 2, 14 qt. per doz	5.00	
Sugar Pails	6.00	6.50
Horse Pails	5.50	
Buggy Pails	4.00	
Slop Jars (bal. trap)	8.00	9.00
Chamber Pails, 14-qt	6.50	7.50

Pans.

Dripping.
Small sizes ..... ₱ ₱ 6¼¢
Large sizes ..... ₱ ₱ 5¾¢
Silver & Co. (Covered) 40%

Fry—
Standard List:

No.	0	1	2	3	4
₱ doz.	$3.00	$3.75	$4.25	$4.75	$5.25
No.	5	6	7	8	9
₱ doz.	$6.00	$7.00	$8.00	$9.00	

Polished, regular goods ..... 70&10%
Acme Fry Pans ..... 60&10%

Paper and Cloth—

Sand and Emery—
List April 19, 1886 ..... 50@50&10%
Sibley's Emery and Crocus Cloth 30%

Parers.

Apple.
Advance ..... ₱ doz $4.75
Baldwin ..... ₱ doz 5.25
Bonanza ..... each 5.00
Champion ..... ₱ doz 7.25
Daisy ..... ₱ doz 4.00
Dandy ..... each 7.50
Eureka, 1888 ..... each 16.00
Family Bay State ..... ₱ doz 12.00
Favorite ..... ₱ doz 5.00
Gem ..... ₱ doz 5.25
Gold Medal ..... ₱ doz 4.00
Ideal ..... ₱ doz 4.00
Improved Bay State .. ₱ doz 27.00 @ 30.00
Little Star ..... ₱ doz 4.50
Monarch ..... ₱ doz 13.50
New Lightning ..... ₱ doz 5.50
Oriole ..... ₱ doz 4.00
Penn ..... ₱ doz 4.00
Perfection ..... ₱ doz 4.00
Pomona ..... ₱ doz 4.00
Rocking Table ..... ₱ doz 6.00
Turntable ..... ₱ doz 4.50
Victor ..... ₱ doz 13.50
Waverly ..... ₱ doz 4.00
White Mountain ..... ₱ doz 4.00
72 ..... ₱ doz 4.25
76 ..... ₱ doz 5.75
78 ..... ₱ doz. 6.50

Potato—
White Mountain ..... ₱ doz $4.50
Antrim Combination ..... ₱ doz $5.50
Hoosier ..... ₱ doz $13.50
Saratoga ..... ₱ doz $5.50

Pencils—
Faber's Carpenters' ..... high list 50%
Faber's Round Gilt ..... ₱ gro $5.25
Dixon's Lead ..... ₱ gro $4.50
Dixon's Lumber ..... ₱ gro $6.75
Dixon's Carpenters' ..... 40&10%

Picks—
Railroad or Adze Eye, 5 to 6, $12.00; 6 to 7, $13.00 ..... 60&10@60&10&5%

Picture Nails.—See Nails, Picture.

Pinking Irons.—See Irons, Pinking.

Pins.

Bow—
Humason, Beckley & Co.'s ..... 60&10%
Sargent & Co's. ..... $17 and $18 ..... 60&10%
Peck, Stow & W Co. ..... 50&10@50&10&5%

Curtain—
Silvered Glass ..... net
White Enamel ..... net

Escutcheon.
Iron, list Nov. 11, 1885 ..... 50&10@50&10&5%
Brass ..... 60@60&5%

Pipe, Wrought Iron—
List September 18, 1889.
1¼ and under, Plain 47½%
1¼ and under, Galvanized 40%
1½ and over, Plain 60%
1½ and over, Galvanized 47½%
Boiler Tubes, Iron, all sizes 50%

Planes and Plane Irons—

Wood Planes—
Molding ..... 30&2%
Bench, First Quality ..... 45&2%
Bench, Second Quality ..... 50&2%
Bailey's (Stanley R. & L. Co.) .. 40&10%

Iron Planes—
Bailey's (Stanley R. & L. Co.) ..... 40&10@40&10&10%
Miscellaneous Planes (Stanley R. & L. Co.) ..... 20&10@20&10&10%
Victor Planes (Stanley R. & L. Co.) ..... 20&10@20&10&10%
Steer's Iron Planes ..... 35@35&10%
Meriden Mal. Iron Co.'s ..... 40@40&10%
Davis's Iron Planes ..... 40@40&10%
Birmingham Plane Co. ..... 50@50&10%
Gage Tool Co.'s Self-Setting ..... 20&10&10%
Chaplin's Iron Planes ..... 40@40&10%
Sargent's ..... 30&10@30&10&10%
Standard Tool Co. ..... 50@50&5%

Plane Irons—
Butcher's ..... $5.00@$5.25 to 2
Buck Bros 30%
Auburn "Thistle" ..... 35&2%
Ohio ..... 35&2%
Sandusky ..... 35&2%
S. & I. J. White 25%

Plates.
Felloe ..... ₱ ₱ 6¢@6¼¢

Pliers and Nippers—
Button's Patent ..... 50@50&10%
Hall's No. 2, 5 in., $13.50; No. 4, 7 in. $21.00 ₱ doz ..... 20&10@33⅓%
Humason & Beckley Mfg. Co. ..50@50&10%
Gas Pliers 60%
Gas Pliers, Custar's Nickel Plated. .60&5%
Eureka Pliers and Nippers 40%
Russell's Parallel 25%
P. S. & W. Cast Steel 50%
P. S. & W. Tinners' Cutting Nippers, Carew's Pat. Wire Cutters 20%
Morrill's Parallel, ₱ doz, $12.00 .. 30&5%
Cronk's 8 in., $15.00; 10 in. $21.00, 40@40&5%

Plumbs and Levels—
Regular List ..... 70&10@70&10&10%
Disston's 50%
Pocket Levels ..... 70&10@70&10&10%
Davis Iron Levels 30%
Davis' Inclinometers ..... 10&10%

Ponchers.

Egg.
Buffalo Steam Egg Poachers, ₱ doz, No. 1, $6.00; No. 2, $9.00 ..... 25%
Silver & Co., 6-Ring, ₱ doz $4; 3-Ring $2

Pokes, Animal—
Bishop's I. X. L. ..... ₱ ₱ doz $6.00
Bishop's O. K. ..... ₱ doz $5.25
Bishop's Pioneer ..... ₱ doz $3.75
Bishop's American ..... ₱ doz $2.75
Eagle, Double Stale ..... ₱ doz $5.75
Eagle, Single Stale ..... ₱ doz $3.75
Buckeye, Single Stale ..... ₱ doz $2.75

Police Goods.
R. I. Tool Co., Handcuffs, $15.00 ₱ doz 10%
R. I. Tool Co., Leg Irons, $25.00 ₱ doz 10%
Tower's 25%
Daley's Improved Handcuffs: 2 Hands, Polished, ₱ doz $48.00; Nickeled, $57.00; 3 Hands, Polished, ₱ doz $72.00; Nickeled, $84.00 ..... 25%
J. P. Lovell's Police Goods 25%

Polish, Metal.
Prestoline 30%
Prestoline Paste 33⅓%
Gaston's Silver Compound 33⅓%

Polish, Stove.
Joseph Dixon's ..... ₱ gro $6.00, 10%
Gem ..... ₱ gro $4.50, 10%
Gold Medal ..... ₱ gro $6.00, 25%
Mirror ..... ₱ pro $6.00, —%
Lustro ..... ₱ gro $4.75
Ruby ..... ₱ gro $3.75
Rising Sun, 5 gro lots ..... ₱ gro $5.50
Dixon's Plumbago ..... ₱ ₱ 8¢
Boynton's Noon Day, ₱ gro 13.00
Parlor Pride Stove Enamel. ₱ gro
Yates' Liquid, 2 3 5 10 gal.... ₱ gal ...$0.80 .70 .60 .50

Yates Standard Paste Polish, 10-₱ cans, ₱ ₱ 12½¢
Jet Black ..... ₱ gro $3.50
Japanese ..... ₱ gro $3.50
Fireside ..... ₱ gro $2.50
Diamond O. K. Enamel ..... ₱ gro $10.00
Bonnell's Liquid Stove Polish. ₱ gro $9.00
Bonnell's Paste Stove Polish. ₱ gro $6.00
Black Eagle Benzine Paste, 5 and 10 ₱ cans ..... 12½¢
Black Jack Water Paste, 5 and 10 ₱ cans ..... 12½¢
Nickel Plate Paste ..... ₱ gro $6.00
Crown Paste ..... ₱ gross, $7.20
Crown Paste, in 5 and 10 ₱ pails ₱ ₱ 1 ¢
Black Flag ..... ₱ gross, $7.20
Black Flag, 5 and 10 ₱ pails, ... ₱ ₱, 12¢
Black Flag, liquid, in bottles, ₱ gro. $8.00 ¢

Poppers, Corn—
Round or Square, 1 qt.. ₱ gr $10.00@10.50
Round or Square, 1½ qt.. ₱ gr $15@15.50
Round or Square, 2 qt.. ₱ gr $18.50@19.00

Post Hole and Tree Augers and Diggers—See Diggers, Post Hole, &c.

Potato Parers—See Parers, Potato.

Pots.

Glue—
Tinned 40%
Enameled ..... 40&5%
Family, Howe's "Eureka" 40%
Family, L. F. C.'s "Handy" 50%

Presses.

Fruit and Jelly—
Enterprise Mfg. Co. ..... 20&10@30%
Henis ..... ₱ doz $3.50
Shepard's Queen City 40%
Silver & Co. ..... ₱ doz $2.75

Pruning Hooks and Shears.—See Shears.

Pullers.

Nail.
Scranton ..... ₱ doz $18.00, 33⅓%
Curtiss Hammer ..... ₱ doz $9.00
Giant, No. 1 ..... ₱ doz. $15.00, 10%
Giant, No. 2 ..... ₱ doz, $15.00, 10%
Pelican ..... ₱ doz, $9.00, 25%

Pulleys—
Hot House, Awning, &c. ..... 60&10%
Japanned Screw ..... 60&10%
Brass Screw ..... 60&10%
Japanned Side ..... 66⅔&10%
Japanned Clothes Line ..... 60&10%
Empire Sash Pulley ..... 55@60%
Moore's Sash, Anti-Friction 50%
Hay Fork, Solid Eye, $4.00; Swivel, $4.50 ..... 50&10@50&10&5%
Hay Fork, "Anti-Friction," 5 in. Solid, $5.70 ..... 50%
Hay Fork, "F" Common and Pat. Bushed 20%
Hay Fork, Tarbox Pat. Iron 20%
Hay Fork, Reed's Self-Lubricating ... 50%
Shade Rack 45%
Tackle Blocks ..... See Blocks
Moore's Anti-Friction 5 in. Wheel, ₱ doz $12.00 ..... 40%

Pumps—
Cistern, Best Makers ..... 60@60&10%
Pitcher Spout, Best Makers ..... 67½@70%
Pitcher Spout, Cheaper Goods. 70@70&5%

Punches—
Saddlers' or Drive, good, ₱ doz ..... 60@65¢
Bemis & Call Co.'s Cast Steel Drive. .50&5%
Bemis & Call Co's Springfield Socket. 50&5%
Spring, good quality ..... ₱ doz $2.50@2.60
Spring, Leach's Pat 15%
Bemis & Call Co.'s Spring and Check .. 40%
Solid Tinners', P. S. & W. Co., ₱ doz $1.44, 55%
Tin'rs' Hollow Punches P. S. & W. Co. 20&2%
Rice Hand Punches 15%
Avery's Revolving 40%
Avery's Saw-Set and Punch. See Saw Sets.

Rail—

Sliding Door, Wr't Brass, ₱ ₱ 35¢ 15%
Sliding Door, Bronzed Wr't Iron .. ₱ ft. 7¢
Sliding Door, Iron, Painted, ₱ foot 4¢, 40%
Barn Door Light. in. ½ ¾ 1
Per 100 feet $2.00 2.50 3.10, 10%
B. D. for N. E. Hangers—
Small. Med. Large.
Per 100 feet ..... $2.15 2.70 3.25. net
Terry's Steel Rail, ₱ foot ..... 4½¢
Victor Track Rail, 7¢ ₱ foot ..... 50&2%
Carrier Steel Rail, ₱ foot ..... 4½¢
Moore's Wrought Iron 25%

Rakes—
Cast Steel, Association goods ..... 66⅔&10%
Cast Steel, outside goods 60&10&10@70&5%
Malleable ..... 70@70&5%
Gibbs Lawn Rake ..... $12.00, 50&15.
Canton Lawn Rake ..... $9.00, 50&10
Ft. Madison Prize Bow Brace and Peerless 65%
Fort Madison Steel Tooth Lawn Rake, $6.00 ..... 25%

Razors—
J. R. Torrey Razor Co 20%
Wostenholme and Butcher, $10.00 to £, 10%
Jordan's AAA1, list Nov. 1, 1889 ..... 50%
Jordan's Old Faithful, list Nov. 1, '89. 50%
Electric ..... List net

Razor Strops—See Strops, Razor.

Rings and Ringers.

Bull Rings—
Union Nut Co. 55%
Sargent's ..... 66⅔&10@70&5%
Hotchkiss' low list 30%
Humason, Beckley & Co.'s ..... 70&10%
Peck, Stow & W. Co's. .50&10@50&10&10%
Ellrich Hdw. Co., White Metal, low list. 50@50&10%

Hog—
Top of the Hill Ringers ..... ₱ doz $2.00
Top of the Hill Rings ..... ₱ doz $1.25
Hill's Improved Ringers ..... ₱ doz $1.25
Hill's Old Style Ringers ..... ₱ doz $1.12½
Hill's Tongs ..... ₱ doz $3.00
Hill's Rings ..... ₱ doz bxs $1.00
Perfect Rings ..... ₱ doz bxs $1.50
Perfect Ringers ..... ₱ doz $2.15@2.25
Blair's Hog Ringers ..... ₱ doz $2.00
Blair's Hog Rings ..... ₱ doz 96¢@$1.00
Champion Ringers ..... ₱ doz $2.00
Champion Rings, Double ..... ₱ doz $2.25
Brown's Ringers ..... ₱ doz $2.00
Brown's Rings ..... ₱ doz $1.15&1.25
Electric Hog R'ngs .. ₱ doz boxes $1.50
Electric Hog Ringers ..... ₱ doz $2.00

Rivets and Burrs—
Iron, list Nov. 17, '87 ..... 40%
Copper ..... 50@50&10%
Coppered Iron, Bettina Brand. 40%

Rivet Sets—See Sets.

Rods—
Stair, Brass ..... 25&2%
Stair, Black Walnut .. .. ₱ doz 40¢

Rollers—
Barn Door, Sargent's list ..... 60&10&10%
Acme Moore's Anti-Friction 55%
Union Barn Door Roller 70%

Rope.
Manila...⅜ in. and larger ..... ₱ ₱ 11½¢
Manila ..... ⅜ in. ₱ ₱ 12½¢
Manila ..... ½ and 5-16 in. ₱ ₱ 13½¢
Manila Tarred Rope ..... ₱ ₱ 11 ¢
Manila, Hay Rope ..... ₱ ₱ 11½¢
Sisal ..... ⅜ inch and larger ₱ ₱ 8 ¢
Sisal ..... ⅜ in. ₱ ₱ 8½¢
Sisal ..... ½ and 5-16 in. ₱ ₱ 8¾¢
Sisal, Hay Rope ..... ₱ ₱ 8 ¢
Sisal, Tarred Rope ..... ₱ ₱ 7½¢
Sisal, Medium Lathe Yarn ..... ₱ ₱ 6¾¢
New Zealand ⅜ in. and larger ₱ ₱ 7¾¢
New Zealand ⅜ inch, ₱ ₱ 8¼¢
New Zealand, ½ and 5-16 inch, ₱ ₱ 9¼¢
New Zealand, Hay Rope ..... ₱ ₱ 7¾¢
New Zealand, Tarred Rope ..... ₱ ₱ 7½¢
Note.—Manufacturers' prices on above ¾¢ ₱ ₱ less, f. o. b. factory.
Cotton Rope ..... ₱ ₱ 15@18¢ net
Jute Rope ..... ₱ ₱ 6¼@6¾¢

Wire—
List May 1, 1886.
Iron ..... 32½&2½%
Iron, Galvanized ..... 40&2½%
Cast Steel ..... 40&2½%

Rules—
Boxwood ..... 80&10&10@80&10&10&10%
Ivory ..... 50@50&10%
Starrett's Rules and Straight Edges, Steel ..... 25&10%

Sad Irons—See Irons, Sad.

Sand and Emery Paper and Cloth—See Paper and Cloth, Sand and Emery.

Sash Cord—See Cord, Sash.

Sash Locks—See Locks, Sash.

Sash Weights—See Weights, Sash.

Sausage Stuffers or Fillers—See Stuffers or Fillers, Sausage.

Saws—
Disston's Circular 45%
Disston's Cross Cuts 45%
Disston's Hand 20%
Woodrough & McParlin.
Hand, Panel and Rip 25%
Narrow Champion Cross Cuts with Handles, ₱ foot ..... 20¢
Champion Thin Back Cross Cuts, ₱ foot ..... 28¢
Champion Extra Thin Back Cross Cuts, ₱ foot ..... 31¢
One Man Champion Cross Cuts, ₱ foot ..... 40¢
Wheeler, Madden & Clemson Mfg. Co.
Hand, Panel and Rip 30%
Narrow Champion Cross Cuts with Handles, ₱ foot ..... 20¢
Champion Thin Back Cross Cuts, ₱ foot 28
Champion Extra Thin Back Cross Cuts, ₱ foot ..... 31¢
One Man Champion Cross Cuts, ₱ ft. 40¢

Atkins' Circular Shingle and Heading dis 50%
Atkins' Silver Steel Diamond X Cuts ₱ foot 70¢
Atkins' Special Steel Dexter X Cuts ₱ foot 50¢
Atkins' Special Steel Diamond X Cuts ₱ foot 32¢
Atkins' Champion and Electric Tooth X Cuts ₱ foot 30¢
Atkins' Hollow Back X Cuts. ₱ foot 20¢
Atkins' Mulay, Mill and Drag 40%
Atkins' One-Man Saw, with handles, ₱ foot 40¢
Peace Circular and Mill 45%
Peace Hand Panel and Rip 25%
Peace Cross Cuts 45%
Richardson's Circular and Mill 45%
Richardson's X Cuts 45%
Richardson's Hand, &c. 25%
C. E. Jennings & Co., Hand, Panel and Rip 25%

Hack Saws—

Griffin's, complete 40&10@50%
Griffin's Hack Saw, Blades 40&10@50%
Star Hack Saws and Blades 25%
Eureka and Crescent 25%

Scroll—

Lester, complete, $10.00 25%
Rogers, complete, $4.00 25%
Barnes' Builders' and Cabinet Makers', $15 25%
Barnes' Scroll Saw Blades 35%

Saw Frames—See Frames, Saw.

Saw Sets—See Sets, Saw.

Saw Tools—See Tools, Saw.

Scales—

Hatch, Counter, No. 171, good quality, ₱ doz $21.00
Hatch, Tea, No. 161 ₱ doz $6.75@$7.00
Union Platform, Plain $2.10@2.20
Union Platform, Striped $2.20@2.30
Chatillon's Grocers' Trip Scales 50%
Chatillon's Eureka 25%
Chatillon's Favorite 40%
Family, Turnbulls 30@30&10%
Riehle Bros.' Platform 40%

Scale Beams—See Beams, Scale

Scissors, Fluting 45%

Scrapers—

Adjustable Box Scraper (S. R. & L. Co.) $6.50 30&10%
Box, 1 Handle ₱ doz $4.00. 10%
Box, 2 Handle ₱ doz $6.00, 10%
Defiance Box and Ship 20&10%
Foot 50&10@60%
Ship, Common ₱ doz $3.50 net
Ship, R. I. Tool Co. 10%

Screen Window and Door Frames—See Frames.

Screw Drivers—See Drivers, Screw.

Screws.

Bench and Hand—

Bench, Iron 55&10@55&10&10%
Bench, Wood, Beech ₱ doz $2.25
Bench, Wood, Hickory 20&10%
Hand, Wood 25&10@25&10&5%
Lag, Blunt Point, list Jan. 1, 1890 75&75&10%
Coach and Lag, Gimlet Point, list Jan. 1, 1890 75@75&10%
Bed 25&5%
Hand Rail, Sargent's 66⅔&10%
Hand Rail, H. & B. Mfg. Co 70&10@75%
Hand Rail, Am. Screw Co. 75%
Jack Screws, Millers Falls list. 50@50&5%
Jack Screws, P. S. & W. 35%
Jack Screws, Sargent 60&10@60&10&5%
Jack Screws Stearns' 40@40&10%

Cork—

Humason & Beckley Mfg. Co. 40&10@50%
Williamson's 33⅓@33⅓&5%
Howe Bros & Hulbert 35%

Machine—

Flat Head, Iron 55%
Round Head, Iron 50%

Wood—

List January 1, 1891.
Flat Head Iron 72½%
Round Head Iron 67½%
Flat Head Brass 7⅓%
Round Head Brass 65 %
Flat Head Bronze 72½%
Round Head Bronze 65 %
Rogers' Drive Screws 83⅓%

Scroll Saws—See Saws, Scroll.

Scythes.

40@5@40&10%
Grass 40&10@50%

Scythe Snaths—See Snaths, Scythe.

Sets.

Awl and Tool.

Aiken's Sets, Awls and Tools, No. 20, ₱ doz $10.00 55&10%
Fray's Adj. Tool Hdls., Nos. 1, $12; 2, $18; 3, $12; 4, $9. 25@25&10%
Miller's Falls Adj. Tool Hdls. Nos. 1, $12, 2, $18 25%
Henry's Combination Haft ₱ doz $6.50
Brad Sets, No. 42, $10.50; No. 43, $12.50. 70&10&5%
Stanley's Excelsior: No. 1, $7.50; No. 2, $4.00; No. 3, $5.50 30&10%

Nail—

Square ₱ gr., $4.00@$4.25
Round ₱ gr. $3.25
Buck Bros. 27½%
Cannon's Diamond Point ₱ gr., $12, 20%

Rivet.

Regular list 50&10%

Saw—

Stillman's Genuine ₱ doz $5.00@7.75, 40&5%
Stillman's Imita ₱ doz $3.25@5.25, 40&5@40&10%
Common Lever ₱ doz $2.00, 40&5%
Morrill's No. 1, $15.00; Nos. 3&4, $24.00, 40&10@50%
Leach's. No. 0, $8.00; No. 1, $15, 15@20%
Nash's 20&10@20&10&10%
Hammer, Hotchkiss $5.50, 10%
Hammer, Bemis & Call Co.'s new Pat. 30&5%
Bemis & Call Co.'s Lever and Spring Hammer 30&5%
Bemis & Call Co.'s Plate 10%
Bemis & Call Co.'s Cross Cut 12½%
Aiken's Genuine $13.00, 50&10%
Aiken's Imitation $7.00, 55&5%
Hart's Pat. Lever 20%
Disston's Star 25%
Leopold 40&10@50%
Atkin's Lever ₱ doz No. 1, $6.00
Atkin's Criterion ₱ doz No. 1, $6.00
Croissant (Keller), No. 1, $15.00; No. 2, $24.00 40&10%
Avery's Saw Set and Punch 50%
Chieftain H. R. Co.'s Superior ₱ doz $15, 50%

Sharpeners, Knife.

Parkin s.
Applewood Handles ₱ doz $6.00, 40%
Rosewood or Cocobolo ₱ doz $9.00, 40%

Shaves, Spoke.

Iron 45%
Wood 30%
Bailey's (Stanley R. & L. Co.) 40&10%
Stearns' 30&10%
Cincinnati 25&10%

Shears—

American (Cast) Iron 75&10@75&10&5%
Barnard's Lamp Trimmers ₱ doz $3.75
Tinners' 20&2%
Seymour's, List, Dec., 1881. 60&10&10@60&10&10&5%
Heinisch's, List, Dec., 1881. 60&10&10@60&10&10&5%
Heinisch's Tailor's Shears 33⅓%
First quality C. S. Trimmers. 80@80&10%
Second quality C. S. Trimmers. 80&10@80&10&10%
Acme Cast Shears 10&10%
Diamond Cast Shears 10%
Clipper 10&10%
Victor Cast Shears 75&10@75&10&5%
Howe Bros. & Hulbert, Solid Forged Steel 40%
Chicago Drop Forge & F. Co., Solid Steel Forged 60%
Clauss Shear Co., Japanned 70%
Clauss Shear Co., Nickeled, same list. 60%
Electric List net

Pruning Shears and Hooks.

Disston's Combined Pruning Hook and Saw ₱ doz $18.00, 20&10%
Disston's Pruning Hook, ₱ doz $12.00, 20&10%
E. S. Lee & Co.'s Pruning Tools 40%
Pruning Shears, Henry's Pat, ₱ doz $3.75@4.00 net
Henry's Pruning Shears, ₱ doz $4.25@4.50 net
Wheeler, M. & C. Co.'s Combination, ₱ doz $12.00, 20%
Dunlap's Saw and Chisel, ₱ doz $8.50, 30%
J. Mallinson & Co., No. 1, $5.25; No. 2 7.25
P., S. & W. Co. 60%

Tinners', &c.—

Shears and Snips (P. S. & W.) 20@25%
Snips, J. Mallinson & Co. 33⅓%

Sheaves—

Sliding Door—

M. W. Co., list July, 1888. 50&10@60&5%
R. & E., list Dec. 18, 1885 55&20%
Corbin's list 60&10&2%
Patent Roller 60&10&2%
Patent Roller, Hatfield's 75%
Russell's Anti-Friction, list Dec. 18, 1885 60&2%
Moore's Anti-Friction 50%

Sliding Shutter—

R. & E. list Dec. 18, 1885 60&10&2%
Sargent's list 60&10%
Reading list 60&10&10%

Ship Tools—

L. & I. J. White 20&5%

Shoes, Horse, Mule, &c.—

Horse—

Gurden's, Perkins', Phœnix, at factory. $4.00

Mule—

Add $1 ₱ keg to above prices.

Ox, Wrought—

Ton lots ₱ ₵ 9¢
1000 ₵ lots ₱ ₵ 9½¢
500 ₵ lots ₱ ₵ 10¢

Shot—

(Eastern prices 2¢ off, cash, 5 days.

Drop, ₱ bag, 25 ₵ $1.36
Drop, ₱ bag, 5 ₵ .32
Buck and Chilled, ₱ 25-₵ bag 1.61
Buck and Chilled, ₱ 5-₵ bag .37
(See Trade Report.)

Shovels and Spades—

Ames' Shovels, Spades, &c., list Nov. 1, 1885 20%
NOTE.—Jobbers frequently give 5@7½% extra on above.
Griffith's Black Iron 50&10%
Griffith's C. S. 60@60&10%
Griffith's Solid C. S. R. R. Goods 20%
St. Louis Shovel Co. 20@20&7½%
Hussey, Binns & Co. 15@25%
Hubbard & Co. 20@20&7½%
Lehigh Mfg. Co. 50&10%
H. M. Myers Co. 30 %
Payne Pettebone & Son 33⅓&5%
Remington's (Lowman's Pat.) 30&10@40%
Rowland's, Black Iron 50&10%
Rowland's Steel 60&5@60&10%

Shovels and Tongs—

Iron Head 60&10@60&10&5%
Brass Head 60&10&10%

Sieves—

Mann's Tin Rim 50&25%
Buffalo Metallic, S. S. & Co. 50&25%
Shaker (Barler's Pat.) Flour Sifters ₱ doz $2.00; ₱ gr $21.60
Electric ₱ gr $21.00
A. & W. Sifters ₱ doz $2.00
Hunter's ₱ doz $2.00
Smith's Adjustable Sifters ₱ doz $2.00
Smith's Adjustable Milk Strainer. ₱ doz $2.00
Smith's Adjustable T. & C. Strainer. ₱ doz. $1.25

Sieves, Wooden Rim—

	Iron.	Plated.
Mesh 18, Nested, ₱ doz..	80¢	$1.00
Mesh 20, Nested, ₱ doz..	95¢	1.10
Mesh 24, Nested, ₱ doz..	$1.15	1.25

Skeins, Thimble—

Western list 75&5@75&10%
Columbus Wrt. Steel. Special net prices
Coldbrookdale Iron Co. 60%
Seneca Falls Pattern 60%
Utica P. S. T. Skeins 60%
Utica Turned and Fitted 35%

Slates—

School, by case 50&10@50&10&10%

Snaps, Harness, &c.—

Anchor (T. & S. Mfg. Co.) 65%
Fitch's (Bristol) 50&10%
Hotchkiss 50%
Andrews 50%
Sargent's Patent Guarded 70&10&10%
German, new list 40&10%
Covert 50&2%
Covert, New Patent 50&5&2%
Covert, New R. E. 60&2%
Covered Spring 60&10&10%

Snaths, Scythe.

List 50&10@50&10&5%

Soldering Irons—See Irons, Soldering.

Spittoons, Cuspidors, &c.

Standard Fiberware—

Cuspidors, 8½-inch, ₱ doz., No. 5, $8; No. 5X $9.
Spittoons, Daisy, 8-inch, No. 1, $4; 10 and 11 inch, $6.

Spoke Shaves—See Shaves, Spoke.

Spoke Trimmers—See Trimmers, Spoke.

Spoons and Forks—

Tinned Iron—

Basting, Cen. Stamp, Co.'s list 70&10%
Solid Table and Tea, Cen. Stamp. Co.'s list 70&10%
Buffalo S. S. & Co. 33⅓&2%

Silver-Plated—(4 mos. or 5% cash 30 days).

Meriden Brit. Co., Rogers 40&15%
C. Rogers & Bros. 40&15%
Rogers & Bro. 40&15%
Reed & Barton 40@40&2%
Wm. Rogers Mfg. Co. 40, 15&2%
Simpson, Hall, Miller & Co. 40, 15&2%
Holmes & Edwards Silver Co. 40, 15&2%
L. Boardman & Son 50&12½%

Miscellaneous.

Holmes & Edwards Silver Co.:
No. 67 Mexican Silver 50&10&5%
No. 30 Silver Metal 50&10&5%
No. 24 German Silver 50&10&5%
No. 50 Nickel Silver 50&5%
No. 49 Nickel Silver 50&10&5%
Wm. Rogers Mfg. Co.
Rogers' Silver Metal 50, 10&6%
18% Rogers' German Silver 60&6%
22% Rogers' Nickel Silver. 50&6%
German Silver 50@50&5
German Silver, Hall & Elton. 50&5% cash
Nickel Silver 50&5@50&10&5% cash
Britannia 60%
Boardman & N'ck'l Silver 40&7½&5% cash
Boardman's Britannia Spoons, case lots 50&12½&5% cash

Springs—

Door.—

Torrey's Rod, regular size ₱ doz $1.30
Gray's, ₱ gr., $20.00 20%
Bee Rod ₱ gr., $20.00 20%
Warner's No. 1, ₱ doz, $2.50; No. 2, $3.30 40&10@50%
Gem (Coil), list April 19, 1886 10%
Star (Coil), list April 19, 1886 20%
Victor (Coil) 60@60&10%
Champion (Coil) 60&10@60&10&10%
Philadelphia, 5 in., $5.00; 8 in., $7.75.. %
Cowell's No. 1, ₱ doz, $18.00; No. 2, $15.00 50%
Rubber, complete, ₱ doz, $4.50 55&10%
Hercules 50%
Shaw Door Check and Spring 25@30@35%

Carriage, Wagon, &c.—

Elliptic, Concord, Platform and Halt Scroll 60&10&10%
Cliff's Bolster Springs 25%

Squares—

Steel and Iron 80 &10%
Nickel-Plated 80 &10%
Try Square and T Bevels 60&10@60&10&10%
Disston's Try Square and T Bevels 50%
Winterbottom's Try and Miter 30&10%
Starrett's Micrometer Caliper Squares 25%
Avery's Flush Bevel Squares 40%
Avery's Bevel Protractor 50%

Squeezers.

Fodder.—

Blair's ₱ doz $2.00
Blair's "Climax" ₱ doz $1.25

Lemon—

Porcelain Lined, No. 1 ₱ doz $6.00, 25&30%
Wood, No. 2 ₱ doz $3.00, 35%
Wood, Common ₱ doz $1.70&1.75
Dunlap's Improved ₱ doz $3.75, 20%
Sammis. No. 1, $5.00; No. 2, $9; 12, $18 ₱ doz 25&10%
Jennings' Star ₱ doz $2.50
The Boss ₱ doz $2.50
Dean's. Nos. 1, ₱ doz $6.50; 2, $3.35; 3, $1.90; Queen, $2.50
Little Giant 50@50&5%
King 40&5%
Hotchkiss Straight Flash ₱ doz $12.00
Silver & Co., Glass ₱ gro. $9.00

Standard Fiber Ware—See Ware, Standard Fiber.

Staples.

Blind—

Barbed, ½ in. and larger ₱ ₵ 7@7½¢
Barbed, ⅝ in. ₱ ₵ 8@8½¢
Fence Staples, Galvanized. } Same price as B'rb Wire. See Trd. Rep.
Fence Staples, Plain. }

Steelyards 40&10@50%

Stocks and Dies—

Blacksmith's
Waterford Goods 40&10@50%
Butterfield's Goods 40&10@50%
Lightning Screw Plate 25@30%
Reece's New Screw Plates 33⅓&5@40%
Reversible Ratchet 30 %
Gardner 25%

Stops, Bench.

Morrill's ₱ doz $9.50%
Hotchkiss's ₱ doz $5.10&10&10%
Weston's, No. 1, $10; No. 2, $9.25&10&5%
McGill's ₱ doz $3 10%
Cincinnati 25&10%

Stone—

Hindostan No. 1, 3¢; Axe, 3½¢; Slips No. 1, 4½¢
Sand Stone ₱ ₵ 2½¢
Washita Stone, Extra ₱ ₵ 20@21¢
Washita Stone, No. 1 ₱ ₵ 15@16¢
Washita Stone, No. 2 ₱ ₵ 11@12¢
Washita Slips, No. 1, Extra ₱ ₵ 37@40¢
Washita Slips, No. 1 ₱ ₵ 25@26¢
Arkansas Stone, No. 1, 4 to 6 in ₱ ₵ $1.50
Arkansas Stone, No. 1, 6 to 9 in ₱ ₵ $1.85
Turkey Oil Stone, 4 to 8 in ₱ ₵ 40¢
Turkey Slips ₱ ₵ $1.00@1.50
Lake Superior, Chase ₱ ₵ 16¢
Lake Superior Slips, Chase ₱ ₵ 31@32¢
Seneca Stone, Red Paper Brand ₱ ₵ 18@20¢
Seneca Stone, High Rounds ₱ ₵ 20@25¢
Seneca Stone, Small Whets ₱ gro $24.00

Stove Polish—See Polish, Stove.

Stretchers, Carpet.

Cast Steel, Polished ₱ doz $2.25
Cast Iron, Steel Points ₱ doz 80¢
Socket ₱ doz $1.75
Juillard's 25@25&10%

Strops, Razor—

Genuine Emerson 60@60&5%
Imitation " ₱ doz $2.00, 20&10&5%
Torrey's 20%
Badger's Belt and Com ₱ doz $2.00
Lamont Combination ₱ doz $4.00
Jordan's Pat. Padded, list Nov. 1, '89 50%
Electric List net

Stuffers or Fillers, Sausage—

Miles' "Challenge," ₱ doz $20, 50@50&5%
Perry ₱ doz, No. 1, $15.00; No. 0, $21.00 50&5@50&10%
Draw Cut No. 4, each $30.00 20%
Enterprise Mfg. Co. 20&10@30%
Silver's 40&10%

Sweepers, Carpet.

Bissell No. 5 ₱ doz $17.00
Bissell No. 7 New Drop Pan ₱ doz $19.00
Bissell, Grand ₱ doz $36.00
Grand Rapids ₱ doz $24.00
Crown Jewel, No. 1, $18.00; No. 2, $19.00; No. 3, $20.00
Magic ₱ doz $15.00
Jewel ₱ doz $17.00
Improved Parlor Queen, Nickeled ₱ doz $27.00
Japanned ₱ doz $24.00
Excelsior ₱ doz $22.00
Garland ₱ doz $18.00
Parlor Queen ₱ doz $24.00
Housewife's Delight ₱ doz $15.00
Queen ₱ doz $16.00
Queen, with band ₱ doz $18.00
King ₱ doz $30.00
Weed, Improved ₱ doz $18.00
Hub ₱ doz $16.00
Cog-Wheel ₱ doz $16.00
Conqueror ₱ doz $22.00
Easy ₱ doz $22.00
Monarch ₱ doz $22.00
Goshen ₱ doz $21.00

Tacks, Brads, &c.—

List Oct. 19, 1889. Standard Weights.

Carpet Tacks—
American Iron, Blued 77½%
Am'ican Iron, Tin'd or Cop'd. 77½%
Steel, Plain or Bright 75%
Steel, Tinned or Coppered 75%
Swedes Iron, Blued 75%
Swedes Iron, Tinned or Cop'd 75%
American Iron Cut Tacks 75%
Swedes Ir. Uphol'rs' Tacks, Blued 75%
Swedes Iron Upholsterers' Tacks, Tinned 77½%
Gimp and Lace Tacks, Blued 77½%
Gimp and Lace Tacks, Tinned 77½%
Swedes Iron Basket or Trimmers' Tacks 70&10%
Miners' Tacks 77½%
Bill-Posters' or Railroad Tacks 75%
Bill-Posters' or Railroad Tacks, Tinned 77½%
Copper Tacks 40%
Copper Finish. & Trunk Nails 40%
Cigar Box Nails 50%
Zinc Glaziers' Points 50%
Picture-Frame Points 50%
Looking-Glass Tacks 50%
Brush Tacks 60%
Tin-Capped Trunk Nails 60%
Finishing Nails 70%
Trunk and Clout Nails, Black and Tinned 72½%
Common and Patent Brads 70%
Hungarian Nails 70%
Basket and Chair Nails 65%
Leathered Carpet Tacks 40%

Miscellaneous—

Double-Pointed, 120 count 85&10%
Wire Carpet Nails 50&10%
Plymouth Rock Steel Carpet Tacks 25%

Extra 10 @ 10&10 %

Wire Brads & Nails, see Nails, Wire.
Steel-Wire Brads, R. & E. Mfg. Co.'s list.....50&10%

Tapes, Measuring—

American.....40@40&5%
Spring.....40%
Chesterman's, Regular list.....25@30%

Thermometers—

Tin Case.....80@80&10%

Thimble Skeins—See Skeins.

Ties, Bale- Steel

Standard Wire, list.....50&10&5%

Tinners' Shears, &c.—See Shears, Tinners', &c.

Tinware—

Stamped, Japanned and Pieced, list Jan. 20 1887.....70&10@70&10&5%

Tire Benders, Upsetters, &c—
See Benders and Upsetters, Tire.

Tools.

Coopers'—

Bradley's.....20%
Barton's.....20@20&5%
L. & I. J. White.....20&5%
Albertson Mfg. Co.....25%
Beatty's.....30%
Sandusky Tool Co.....30@30&5%
Shaven, Cincinnati Tool Co.....20%

Lumber.

Ring Peavies, "Blue Line"...₱ doz $20.00
Ring Peavies, Common.....₱ doz $18.00
Steel Socket Peavies.....₱ doz $21.00
Mall. Iron Socket Peavies.....₱ doz $19.00
Cant Hooks, "Blue Line".₱ doz $16.00
Cant Hooks, Common Finish..₱doz$14.00
Cant Hooks, Mall. Socket Clasp, "Blue Line" Finish.....$16.00
Cant Hooks, Mall. Socket Clasp, Common Finish.....₱ doz $14.50
Cant Hooks, Clip Clasp, "Blue Line" Finish.....₱ doz $14.00
Cant Hooks, Clip Clasp, Common Finish.....₱ doz $12.00
Hand Spikes....₱ doz 6 ft., $15.00; 8 ft., $20.00
Pike Poles, Pike & Hook, ₱ doz., 12 ft., $11.50; 14 ft., $12.50; 16 ft., $14.50; 18 ft., $17.50; 20 ft., $21.50.
Pike Poles, Pike only, ₱ doz, 12 ft., $10.00; 14 ft., $11.00; 16 ft., $13.00; 18 ft., $16.00; 20 ft., $20.00.
Pike Poles, not ironed, ₱ doz, 12 ft. $6.00; 14 ft., $7.00; 16 ft., $9.00; 18 ft., $12.00; 20 ft., $16.00.
Setting Poles, ₱ doz, 12 ft., $14.00; 14 ft., $15.00; 16 ft., $17.00
Swamp Hooks.....₱ doz $18.00

Saw.

Atkins' Perfection.....₱ doz $12.00
Atkins' Excelsior.....₱ doz $6.00
Atkins' Giant.....₱ doz $4.00

Tobacco Cutters—See Cutters, Tobacco.

Transom Lifters — See Lifters, Transom.

Traps—

Game—

Newhouse.....40@40&5%
Oneida Pattern.....70&10%
Game, Blake's Patent.....40&10&5%

Mouse and Rat—

Mouse Wood, Choker, ₱ doz holes, 11@12¢
Mouse, Round Wire.....₱ doz $1.50, 10%
Mouse, Cage, Wire.....₱ doz $2.50, 10%
Mouse, Catch-'em-alive....₱ dz $2.50 15%
Mouse, Bonanza.....₱dos $0.90@$1.00
Mouse, Delusion.....₱ $1.00@$1.25
Rat, Decoy.....₱ gr $10.00, 10%
Ideal.....₱ gr $10.00
Cyclone.....₱ gr $5.25
Hotchkiss Metallic Mouse, 5-hole traps, ₱ dos., 90¢; in full cases, ₱ dos.....75¢
Hotchkiss Imp. Rat Killer..₱ gro $18.50
Hotchkiss New Rat Killer...₱ gro $16.50
Schuyler's Rat Killer.....₱ gro $15.00

Triers—

Butter and cheese.....25%

Trimmers, Spoke.

Bonney's.....₱ doz $10.00, 50%
Stearns'.....20&10%
Ives', No. 1, $15.00; No. 2, $12.00 ₱ doz. 55&10%
Douglas'.....₱ doz $9.00, 20%
Cincinnati.....25%

Trowels—

Lothrop's Brick and Plastering. 20&10&5@35%
Reed's Brick and Plastering.....15%
Disston's Br'k and Plastering.....25%
Peace's Plastering.....25%
Clement & Maynard's.....20%
Rose's Brick.....15@20%
Brade's Brick.....25%
Worrall's Brick and Plastering.....20%
Garden.....70%

Trucks, Warehouse, &c.—

B. & L. Block Co.'s list, '82.....40%

Tubes, Boiler—

See Pipe.

Twine—

Flax Twine—	BC.	B.
No. 9, ¼ and ⅛ ℔ Balls	26¢	34¢
No. 12, ¼ and ⅛ ℔ Balls	25¢	33¢
No. 18, ¼ and ⅛ ℔ Balls	32¢	32¢
No. 24, ¼ and ⅛ ℔ Balls	22¢	32¢
No. 36, ¼ and ⅛ ℔ Balls	20¢	31¢

No. 264, Mattrass, ¼ and ⅛ ℔ Balls.52@54¢
Chalk Line, Cotton, ½ ℔ Balls.....25¢
Mason Line, Linen, ½ ℔ Balls.....55¢
2-Ply Hemp, ¼ and ⅛ ℔ Balls (Spring Twine).....15½¢
3-Ply Hemp, 1 ℔ Balls.....16¢@16½¢
3-Ply Hemp, 1½ ℔ Balls.....15¢@15½¢
Cotton Wrapping, 5 Balls to ℔ ..15¢@16¢
2, 3, 4 and 5-Ply Jute, ½ ℔ Balls.....10¢
Wool.....05½@06½¢
Paper.....13¢@14¢
Cotton Mops, 6, 9, 12 and 15 ℔ to doz..18¢

Vises—

Solid Box.....50&10@50&10&5%

Parallel—

Fisher & Norris Double Screw.....15&10%
Stephens'.....25@30%
Parker's.....20@25%
Wilson's.....55%
Howard's.....40%
Bonney's.....40&10%
Millers Falls.....40@40&10%
Trenton.....40&5@40&10%
Merrill's.....15@20%
Sargent's.....60&10&10%
Backus and Union.....40%
Double Screw Leg.....15&10%
Prentiss.....20@25%
Simpson's Adjustable.....40%
Moore's.....20%
Massey Quick Action.....20 @ 25 %

Saw Filers—

Bonney's, Nos. 2 & 3, $15.00.....40&10%
Stearn's.....33⅓&10@33⅓&10&10%
Stearn's Silent Saw Vises.....33⅓@35%
Sargent's.....66⅔&10%
Hopkins'.....₱ doz $17.50, 10%
Reading.....40&10%
Wentworth.....20&10%

Miscellaneous.

Combination Hand Vises.....₱ gr $42.00
Cowell Hand Vises.....20%
Bauer's Pipe Vises.....10%
Cincinnati.....25&10%
Enterprise Pipe Vises, each.....$3.00
Massey Combination Pipe.....40 %

Wagon Boxes—See Boxes, Wagon.

Washer Cutters—See Cutters Washer.

Wagon Jacks—See Jacks, Wagon.

Ware, Hollow, Enameled, &c.

Cast Iron, Hollow—

Stove Hollow-Ware—
Ground.....55&5@60&5%
Unground.....65&10@65&10&5%
White Enameled-Ware—
Maslin Kettles.....60&10&5%
Boilers and Saucepans.....40%
Tinned Boilers and Saucepans.....40%
Rustless Hollow-Ware.....50@50&5%
Gray Enameled-Ware—
Stove.....50%
Maslin Kettles.....60&10&10%
Boilers and Saucepans.....40&5%

Enameled—

Agate and Granite Ware, list Jan. 1, 1889.....33⅓&10%
Ironclad Enameled Ware...dis 33⅓&10%

Kettles—

Galvanized Tea-Kettles—

Inch....	6	7	8	9
Each....	55¢	60¢	65¢	70¢

Standard Fiber—

	Per Dozen. Plain.	Dec'r'd
Wash-Basins, 10½ in.	$2.00	$2.25
Wash-Basins, 12 in.	2.25	2.75
Keelers, 11¼ in.		4.00
Cuspidors.		3.00
Spittoons, "Daisy," 8 in....	4.00	4.50
Peck Measure.	4.00	
Half-peck Measure.	3.50	

See also Pails.

Indurated Fiber—25%

Spittoons, No. 2, ₱ doz.....$9.00
Basins, Ringed, ₱ doz., No. 2, $4.80; No. 3.....$4.20
Washtubs, Nested, Nos. 0, 1, 2 and 3 (4 pieces), ₱ nest.....$7.50
Keelers, Nested, Nos. 1, 2, 3 and 4 (4 pieces), ₱ nest.....$3.70
Butter Bowls 15, 17 and 19-inch (3 pieces), ₱ nest.....$2.25
Liquid Measures, pt., qt., 2 qt. and funnell (4 pieces) ₱ set.....$3.00
Dry Measures, 1, 2, 4, 8 and 16 qts. (5 pieces), ₱ set.....$3 00
See also *Pails.*

Silver Plated, Hollow—

4 mo. or 5 % cash in 30 days.
Reed & Barton.....
Meriden Britannia Co.....
Simpson, Hall, Miller & Co.....
Rogers & Brother.....
Hartford Silver Plate Co.....
William Rogers Mfg. Co.....
} 40&5%

Washers—

Size hole..... 5-16 ⅜ ½ ⅝ to 1⅜
Washers..... 6 5 2.9 2.65¢

In lots less than 200 ℔, ₱ ℔, add ½¢, 5-1 boxes 1¢ to list.

Wedges—

Iron.....₱ ℔ 1½
Steel.....₱ ℔ 3½¢

Weights, Sash—

Solid Eyes.....₱ ton $18@$19

Well Buckets, Galvanized—See Buckets, Well, Galvanized.

Wheels, Well.

8 in., $2.25; 10 in., $2.70; 12 in., $3.35

Wire and Wire Goods—

Iron—

Market,
Br. & Ann., Nos. 0 to 18.....75%
Cop'd, Nos. 0 to 18.....72½%
Galv., Nos. 0 to 18.....65%
Tin'd, Tinned list Nos. 0 to 18.....65%
Stone,
Br. and Ann'd, Nos. 16 to 18.....75%
Bright and Ann'd, Nos. 19 to 26....77½%
Br. and Ann'd, Nos. 27 to 36.....80%
Tinned.....
Tinned Broom Wire, 18 to 21, ₱ ℔...5½¢
Galvanized Fence, Nos. 8 and 9.....67½%
Annealed Fence, Nos. 8 and 9.....77½%
Annealed Grape, Nos 10 to 14.....77½%
Brass, list Jan. 18, 1884.....30%
Copper, list Jan. 18, 1884.....30%
Barb Fence.....See Trade Report
Annealed Wire on Spools.....60%
Malin's Steel and Tin'd on Spools.....50%
Malin's Brass and Cop. on Spools.....40%
Tate's Spooled, Tinned and Annealed.55%
Tate's Spooled Cop. and Brass.....45%
Cast Steel Wire.....50%
Stubs' Steel Wire.....$6.00 to $2, 30%
Steel Music Wire, 12 to 30...60@70¢ ₱ ℔
Wire Clothes Lines, see Lines.
Wire Picture Cord see cord.

Bright Wire Goods—

Standard list.....85%

Wire Cloth and Netting.

Painted Screen Cloth, good quality, ₱ 100 sq. ft., $1.40 @ $1.45
Galvanized Wire Netting.....70&10@75%

Wire Rope—See Rope, Wire.

Wrenches—

American Adjustable.....40%
Baxter's Adjustable "S".....40&10@50%
Baxter's Diagonal.....40&10@50%
Coes' Genuine.....50&3%
Coes' "Mechanics".....50&10&3%
Girard Standard.....65&10%
Lamson & Sessions' Engineers'.....60&10%
Lamson & Sessions' Standard.....70&10%
P. S. & W. Agricultural.... } 75& 5 @ 75
Girard Agricultural..... } &10
Lamson & Sessions' Agric'l.. }
Bemis & Call's
Pat. Combination.....35%
Merrick's Pattern.....35%
Brigg's Pattern.....25%
Cylinder or Gas Pipe.....40&5%
No. 3 Pipe.....40&10%
Aiken's Pocket (Bright).....$6.00, 50&10%
The Favorite Pocket.....₱ doz $4.00, 40%
Webster's Pat. Combination.....25%
Boardman's.....20&10%
Always Ready.....25&5%
Alligator.....50%
Donohue's Engineer.....20&10%
Acme, Bright.....50&2%
Acme, Nickeled.....40&2%
Hercules.....70%
Walker's.....55&3%
Diamond Steel.....55&3%
Cincinnati Brace Wrenches.....25&10%
Tafts' Vise Wrench.....55&10&3%

Wringers, Clothes—

List September 20, 1890, 2% cash.

Wrought Goods—

Staples, Hooks, &c., list Jan. 12, 1886. 85@85&10%

PAINTS, OILS AND COLORS.—Wholesale Prices.

Animal and Vegetable Oils.

Linseed, City, raw..per gal.	56	@	62
Linseed, City, boiled.....	61	@	65
Linseed, Western, raw.....	53	@	..
Lard, City, Extra Winter..	52	@	53
Lard, City, Prime.....	49	@	50
Lard, City, Extra No. 1.....	45	@	46
Lard, City, No. 1.....	42	@	43
Lard, Western, prime.....	48	@	49
Cotton-seed, Crude, prime..	..	@	29
Cotton-seed, Crude, off grades.....	20	@	25
Cotton-seed, Summer Yellow, prime.....	33	@	34
Cottonseed, Summer Yellow, off grades.....	27½	@	30
Sperm, Crude.....	70	@	72
Sperm, Natural Spring.....	68	@	70
Sperm, Bleached Spring....	72	@	74
Sperm, Natural Winter.....	74	@	76
Sperm, Bleached Winter...	79	@	81
Whale, Crude.....	..	@	..
Whale, Natural Winter.....	..	@	52
Whale, Bleached Winter...	..	@	55
Whale, Extra Bleached.....	..	@	58
Sea Elephant, Bleached Winter.....	..	@	62
Menhaden, Crude, Sound...	25	@	27
Menhaden, Crude, Southern	..	@	..
Menhaden, Light Pressed..	28	@	29
Menhaden, Bleached W'ter.	31	@	32
Menhaden, Extra Bleached	35	@	..
Tallow, City, prime.....	..	@	44
Tallow, Western, prime....	..	@	..
Cocoanut, Ceylon.....	7	@	7¼
Cocoanut, Cochin.....	8¼	@	8½
Cod, Domestic.....	..	@	35
Cod, Foreign.....	..	@	35
Red Elaine.....	31	@	34
Red Saponified..... ₱ ℔	4½	@	4¾
Bank.....per gal	..	@	25
Straits.....	..	@	26
Olive, Italian, bbls.....	65	@	68
Neatsfoot, prime.....	62½	@	75
Palm, prime, Lagos....₱ ℔	6½	@	6¾

Mineral Oils.

Black, 29 gravity, 25 @ 30 cold test.....per gal	8½	@	9
Black, 29 gravity, 15 cold test.....	9	@	9½
Black, 29 gravity, summer.	7	@	..
Cylinder light, filtered.....	15	@	..
Cylinder, dark, filtered	14	@	20
Cylinder, dard, st'm refined	10	@	18
Paraffine, 23½ @ 24 gravity.	12½	@	13
Paraffine, 25 gravity.....	11½	@	12
Paraffine, 28 gravity.....	10½	@	11
Paraffine, red, 21 @ 22 gr'ty	..	@	14½
Paraffine, red, 22½@23 gr'ty	12½	@	13

Paints and Colors.

Barytes, Prime White..... ₱ ton.	$21.00	@	22.50
Barytes, Amer. refined...	20.00	@	....
Barytes, Amer. No. 1....	18.00	@	....
Barytes, Amer. No. 2.....	16.00	@	....
Barytes, Amer., off-color.	13.00	@	15.00
Blue, Celestial ..... ₱ ℔	6	@	8
Blue, C hinese	50	@	55
Blue, Prussian.....	25	@	40
Blue, Ultramarine	10	@	30
Brown, Spanish	½	@	1
Brown, Vandyke, Amer..	3	@	3½
Brown, Vandyke, English	6	@	8
Black, American Drop....	8	@	10
Black, English Drop.....	12	@	14
Black, Frankfort, Drop....	5	@	15
Black, Lamp, commop....	12	@	18
Black, Lamp, medium....	19	@	25
Black, Lamp, prime.....	27	@	33
Carmine, No. 40, in bulk.	3.10	@	..
Carmine, No. 40, in boxes or barrels	3.20	@	..
Carmine, No. 40, in ounce bottles.....	4.20	@	..
Chalk, fh bulk.... ₱ ton.	2.50	@	2.75
Chalk, in bbls.. ₱ 100 ℔.	30	@	35
China Clay, English.... ₱ ton.	12.00	@	18.00
Cobalt Oxide, prep'd....	2.90	@	....
Cobalt Oxide, black.. lots 100℔.	2.60	@	....
Cobalt, Oxide, black..... less 100℔	2.65	@	....
Green, Paris, in bulk....	14	@	14½
Green, Paris, 170 @ 175 ℔ kegs.....	14½	@	15
Green, Paris, small pack.	16	@	21
Green, Chrome, ordinary	8	@	18
Green, Chrome, pure...	22	@	25
Lead, Eng., B.B. white....	9	@	10
Lead, Amn. White, dry or in oil: Kegs, lots less than 1000 ℔..		@	7½
Kegs, lot's 1000 ℔ to 5 tons.		@	6¾
Kegs, lot's 5 tons to 12 tons..		@	6¾
Kegs, lot's 12 tons and over..		@	6¾
Lead White in oil, 25 ℔ tin pails, add to keg price.		@	⅛
Lead, White, in oil, 12½ ℔ tin pails, add to keg price.....		@	1
Lead, White, in oil, 1 to 5 ℔ assorted tins, add to keg price.		@	2½
Lead, Red, bbls. and ½ bbls....	6½	@	7
Lead, Red, kegs.....	6¾	@	7¼
Litharge, kegs.....	6½	@	7¼
Litharge, bbls. and ½ bbls.....	6¼	@	7

TERMS, &c.—Lead and Litharge.—On lots of 1000 ℔ or over, 60 days' time or 2½ % discount for cash if paid within 15 days of date of invoice.

Ocher, Rochelle.....	1.35	@	1½
Ocher, French Washed....	1½	@	2½
Ocher, German Washed....	1½	@	3
Ocher, American.....	½	@	1½
Orange Mineral, English...	9	@	9½
Orange Mineral, French....	9½	@	10
Orange Mineral, German ..	8½	@	9½
Orange Mineral, American.	8	@	8½
Paris White, English Cliff-stone.....	90	@	1.10
Paris White, American.....	70	@	80
Red, Indian, English.....	5½	@	7
Red, Indian, American.....	2	@	6
Red, Turkey.....	9	@	14
Red, Tuscan.....	9	@	11
Red, Venetian, American.. ₱ 100 ℔.	1.00	@	1.35
Red, Venetian, English....	1.25	@	1.75
Sienna, Italian, Burnt and Powd. ₱ ℔	5	@	6½
Sienna, Ital., Burnt Lumps	1½	@	3½
Sienna, Ital., Raw, Powd..	5	@	6½
Sienna, Ital., Raw Lumps..	2	@	3½
Sienna, American, Raw....	1½	@	1¾
Sienna, American, Burnt and Powdered.....	1½	@	1¾
Talc, French.....	1½	@	1½
Talc, American.....	1	@	1¼
Terra Alba, Fr'ch. ₱ 100 ℔	72½	@	80
Terra Alba, English	80	@	85
Terra Alba, American No. 1	70	@	75
Terra Alba, American No. 2	38	@	40
Umber, Turkey, Bnt. and Powd. ₱ ℔	3½	@	4
Umber, Turkey Bnt. Lin	2½	@	3
Umber, Turkey, Raw and Powdered.....	3½	@	..
Umber Turkey, R'w Lmps	2½	@	2¾
Umber, Turkey, Bnt. Amer.	1¼	@	1¾
Umber, Turkey, R'w Amer.	1¼	@	1¾
Yellow, Chrome.....	10	@	25
Vermilion, Americ. Lead..	11½	@	12
Vermilion, Quicks'er, bulk.	..	@	70
Vermilion, Quicks'er, bags.	..	@	71
Vermilion, Quicksilver, smaller pkgs.....	..	@	75
Vermilion, English Import	80	@	85
Vermilion, Imitation, Eng.	8	@	25
Vermilion, Trieste.....	87½	@	90
Vermilion, Chinese.....	90	@	95
Whiting, Common. ₱ 100 ℔	40	@	45
Whiting, Gilders'.....	50	@	55
Zinc, American, dry.... ₱ ℔	4½	@	5
Zinc, French, Red Seal.....	..	@	8½
Zinc, French, Green Seal..	..	@	8¾
Zinc, French, V. M. X.....	..	@	7
Zinc, Antwerp, Red Seal...	..	@	7½
Zinc, Antwerp, Green Seal	..	@	8¼
Zinc, German, L. Z. O.....	..	@	6¾
Zinc, V. M. in Poppy Oil, G. Seal, lots of 1 ton and over.....	10¾	@	11¼
lots less than 1 ton.....	11	@	11½
Zinc, V. M. in Poppy Oil, Red Seal.....	..	@	..
lots of 1 ton and over....	10	@	10½
Lots of less than 1 ton....	10¼	@	10¾

DISCOUNTS.—French Zinc.—Discounts to buyers of 10- bbl. lots of one or assorted grades, 1 %; 25 bbls, 2 %, 50 bbls, 4 %. No discount allowed on less than bbl. lots.

Colors in Oil.

Blue, Chinese..... ₱ ℔	35	@	40
Blue, Prussian.....	20	@	45
Blue, Ultramarine.....	12	@	18
Brown, Vandyke.....	7	@	12
Green, Chrome.....	8	@	13
Green, Paris.....	16	@	18½
Sienna, Raw.....	7	@	13
Sienna, Burnt.....	7	@	13
Umber Raw.....	7	@	10
Umber, Burnt	7	@	10

Spirits Turpentine.

In regular bbls.....	39	@	39¼
In machine bbls.....	39½	@	40

Glue.

Low Grade..... ₱ ℔	8	@	10
Cabinet.....	12	@	14
Medium White.....	13	@	15
Extra White.....	17	@	20
French.....	10	@	..
English.....	10	@	1
Irish.....	12	@	..

CURRENT METAL PRICES.

JANUARY 28, 1891.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market reports.

IRON AND STEEL.

Bar Iron from Store.

Common Iron: ⅜ to 2 in. round and square.. 1 to 6 in. x ⅜ to 1 in.....	₩ lb 2.00 @ 2.10¢
Refined Iron: ⅜ to 2 in. round and square.. 1 to 4 in. x ⅜ to 1½ in..... 4½ to 6 in. x ⅜ to 1 in.....	₩ lb 2.10 @ 2.30¢
1 to 6 in. x ½ and 5-16	₩ lb 2.30 @ 2.50¢
Rods—⅜ and 11-16 round and sq.	₩ lb 2.20 @ 2.40¢
Bands—1 to 6 x 3-16 to No. 12	₩ lb 2.40 @ 2.60¢
"Burden Best" Iron, base price	₩ lb 3.00¢
Burden's "H. B. & S." Iron, base price	₩ lb 2.80¢
"Ulster"	₩ lb 3.00¢
Norway Bars	4.00¢
Norway Shapes	5.00¢

Merchant Steel from Store.

	Per pound.
Open-Hearth and Bessemer Machinery, Toe Calk, Tire and Sleigh Shoe, base price in small lots	2¾¢
Best Cast Steel, base price in small lots	8 ¢
Best Cast Steel Machinery, base price in small lots	5¢

Sheet Iron from Store.

	Common American.	R. G.	Cleaned.
10 to 16	₩ lb 3.00 @ 3.00¢	3.35 @	¢
17 to 20	₩ lb 3.15 @ 3.25¢	3.35 @ 3.75	¢
21 to 24	₩ lb 3.35 @ 3.35¢	3.60 @	¢
25 and 26	₩ lb 3.35 @	3.60 @	¢
27	₩ lb 3.50 @ 3.62½¢	3.85 @	¢
28	₩ lb 3.65 @ ¢	4.10 @	¢
	B. B.		2d qual.
Galv'd, 14 to 20,	₩ lb, 4.75 @	4.60 @	¢
Galv'd, 21 to 24,	₩ lb, 5.12 @	5.00 @	¢
Galv'd, 25 to 26,	₩ lb, 5.50 @	5.35 @	¢
Galv'd, 27	₩ lb, 5 90 @	5.70 @	¢
Galv'd, 28	₩ lb, 6.25 @	6.10 @	¢
Patent Planished	₩ lb A 10¢	B, 9¢	
Russia	₩ lb 10½¢ @ 11¢		
American Cold Rolled B. B.	₩ lb 5¢ @ 7¢		
Craig Polished Sheet Steel	₩ lb, 8½¢		

English Steel from Store.

Best Cast	₩ lb 15 ¢
Extra Cast	₩ lb 16½ @ 17 ¢
Swaged, Cast	₩ lb 16 ¢
Best Double Shear	₩ lb 15 ¢
Blister, 1st quality	₩ lb 12 ¢
German Steel, Best	₩ lb 10 ¢
2d quality	₩ lb 9 ¢
3d quality	₩ lb 8 ¢
Sheet Cast Steel, 1st quality	₩ lb 15 ¢
2d quality	₩ lb 14 ¢
3d quality	₩ lb 12½¢
R. Mushet's "Special"	₩ lb 48 ¢
" " "Titanic"	₩ lb 30 ¢

METALS.

Tin.

	Per lb
Banca, Pigs	22½¢
Straits, Pigs	22¾¢
Straits in Bars	24 ¢

Tin Plates.

			Per box.
	Charcoal Plates.—Bright.		
Melyn Grade	IC, 10 x 14	@	$6.50
" "	IC, 12 x 12	@	6.75
" "	IC, 14 x 20	@	6.50
" "	IC, 20 x 28	@	13.25
" "	IX, 10 x 14	@	8.00
" "	IX, 12 x 12	@	8.25
" "	IX, 14 x 20	@	8.00
" "	IX, 20 x 28	@	16.00
" "	DC, 12½ x 17	@	6.00
" "	DX, 12½ x 17	@	7.50
Calland Grade	IC, 10 x 14	@	6.50
" "	IC, 12 x 12	@	6.75
" "	IC, 14 x 20	@	6.40
" "	IX, 10 x 14	@	7.65
" "	IX, 12 x 12	@	7.90
" "	IX 14 x 20	@	7.65
Allaway Grade	IC, 10 x 14	@	6.00
" "	IC, 12 x 12	@	6.15
" "	IC, 14 x 20	@	6.00
" "	IC, 20 x 28	@	11.80
" "	IX, 10 x 14	@	7.17
" "	IX, 12 x 12	@	7.30
" "	IX, 14 x 20	@	7.15
" "	IX, 20 x 28	@	14.25
" "	DC, 12½ x 17	@	5.65
" "	DX, 12½ x 17 .. 6.00	@	6.65
	Coke Plates.—Bright.		
Steel Coke.—IC, 10 x 14, 14 x 20		@	$5.60
10 x 20		@	7.75
20 x 28		@	11.25
IX, 10 x 14, 14 x 20		@	6.50
BV Grade.—IC, 10 x 14, 14 x 20		@	5.60
	Charcoal Plates.—Terne.		
Dean Grade.—IC, 14 x 20		@	$5.40
20 x 28		@	10.70
IX, 14 x 20		@	6.10
20 x 28		@	12.10
Abecarne Grade.—IC, 14 x 20		@	5.10
20 x 28		@	10.35
IX, 14 x 20		@	6.10
20 x 28		@	12 10

Tin Boiler Plates.

IXX, 14 x 26	112 sheets	@ $13.50
IXX, 14 x 28	112 sheets	@ 13.75
IXX, 14 x 31	112 sheets	@ 15 25

Copper.

Duty: Pig, Bar and Ingot, 1¼¢; Old Copper, 1¢ ₩ lb. Manufactured (including all articles of which Copper is a component of chief value), 35 % ad valorem.

Ingot.

Lake	@ 16 ¢
Baltimore Grade	@ 14 ¢

Sheet and Bolt.

Prices adopted by the Association of Copper Manufacturers of the United States, December 5, 1890, being quotations for all sized lots.

Not wider than	Not longer than	And longer than	Weights per square foot and prices per pound. Over 64 oz.	32 to 64 oz.	16 to 32 oz.	14 to 16 oz.	12 to 14 oz.	10 to 12 oz.	8 to 10 oz.	Less than 8 oz.
30	72		22	22	22	23	24	25	28	30
30		72	22	22	22	23	25	27	31	....
36	96		22	22	22	24	26	30	33	....
36		96	22	22	24	25	27	31	35	....
48	96		22	22	24	26	28	32	....	....
48		96	22	22	25	27	29	33	....	....
60	96		22	22	27	29	34	....	....	....
60		96	22	23	28	....	....	....	....	....
84	96		23	24	....	....	....	....	....	....
84		96	24	25	....	....	....	....	....	....
Over 84 in. wide			25	27	....	....	....	....	....	....

All Bath Tub Sheets	16 oz.	14 oz.	12 oz.	10 oz.
Per pound	$0.27	0.29	0.31	0.35

Bolt Copper, ⅝ inch diameter and over, per pound..... 22¢

Circles, 60 inches in diameter and less, 3 cents per pound advance over lowest prices of Sheet Copper of the same thickness.

Copper Bottoms, Pits and Flats.

	Per pound.
14 ounce to square foot and heavier	26¢
12 ounce and up to 14 ounce to square foot	27¢
10 ounce and up to 12 ounce	29¢
Lighter than 10 ounce	32¢

Circles less than 8 inches diameter 2 cents per pound additional.

Circles over 13 inches diameter are not classed as Copper Bottoms.

Tinning.

Tinning sheets on one side, 10, 12 and 14 x 48 each	8¢
Tinning sheets on one side, 30 x 60 each	30¢
For tinning boiler sizes, 9 in. (sheets 14 in. x 60 in.), each	15¢
For tinning boiler sizes, 8 in. (sheets 14 in. x 56 in.), each	12¢
For tinning boiler sizes, 7 in. (sheets 14 in. x 52 in.) each	12¢
Tinning sheets on one side, other sizes, per square foot	2½¢

For tinning both sides double the above prices.

Planished Brass and Copper.

14 x 48, 14 x 52, 14 x 56, 14 x 60 in.

14 and 16 oz. and heavier..33¢. By the case...32¢ ₩ lb
12 oz. and lighter.....35¢. By the case...34¢ ₩ lb

24 x 48 and 30 x 60.

14 and 16 oz. and heavier..36¢. 12 oz.....39¢ ₩ lb

Seamless Brass and Copper Tubes.

O. G.	N. G.	⅜	½	⅝	¾	⅞	1	1¼
8-14	6-12	37	33	30	29	28	27	24
15	13	38	36	31	30	29	28	25
16	14	39	34	32	31	30	29	25
17	15	40	35	33	30	31	30	26
18	16	42	36	34	32	31	30	27
19	17	43	37	35	34	33	32	29
20	18-19	44	39	37	36	35	34	31
21	20	46	41	39	38	37	36	34
22	21	48	42	40	39	38	37	36
23	22	50	44	42	41	40	39	39
24	23	53	46	44	43	41	40	41
25	24	56	49	46	45	44	43	45

Copper Bronze and Gilding Tube, 3¢ ₩ lb additional.

Brazed Brass Tubing. (To No. 20, inclusive.

Above 5-16 inch to 3 inch, inclusive	35¢
Plain, above 3 inch	45¢
Plain, 5-16 inch	45¢
Plain, ¼ inch	60¢
Plain, 3-16 inch	$1.00
Plain, ⅛ inch	1.50
Fancy Tubing, Brass, to No. 20, inclusive	43¢ ₩ lb
bronze Tubing, 3¢ ₩ lb more than Brass.	
Discount from list	25 @ ... %

Roll and Sheet Brass.

(Brown & Sharpe Standard Gauge.)

Common High Brass: Wider than and including	in. 2 10	in. 10 12	in. 12 14	in. 14 16	in. 16 18	in. 18 20	in. 20 22	in. 22 24
To No. 20, inclusive	.21	.22	.23	.25	.27	.29	.31	.33
Nos. 21, 22, 23 and 24	.22	.23	.24	.26	.28	.30	.32	.34
Nos. 25 and 26	.22½	.23½	.24½	.27	.29	.31	.33	.35
Nos. 27 and 28	.23	.24	.25	.28	.30	.32	.34	.36

Common High Brass: Wider than and including	in. 24 26	in. 26 28	in. 28 30	in. 30 32	in. 32 34	in. 34 36	in. 36 38	in. 38 40
To No. 20, inclusive	.36	.39	.42	.46	.50	.55	.60	.65
Nos. 21, 22, 23 and 24	.37	.40	.43	.47	.51	.56	.61	.68
Nos. 25 and 26	.38	.41	.44	.48	.52	.57	.63	.71
Nos. 27 and 28	.39	.42	.45	.49	.53	.58	.65	.75

Brass and Copper Wire.

Old English guage standard.	Com. high brass. Per lb.	Low brass. Per lb.	Gildi'g br'ze & copper Per lb.
All Nos. to No. 16, inclusive	$0.22	$0 26	$0.30
No. 17 and No. 18	.23	.27	.31
No. 19 " " 20	.24	.28	.32
No. 21	.25	.29	.33
No. 22	.26	.30	.34
No. 23	.28	.32	.36
No. 24	.30	.34	.38
No. 25	.32	.36	.40
No. 26	.35	.39	.43
No. 27	.38	.42	.46
No. 28	.42	.46	.51
No. 29	.45	.49	.54
No. 30	.48	.52	.62
No. 31	.51	.55	.67
No. 32	.55	.59	.73
No. 33	.59	.63	.82
No. 34	.64	.68	.95
No. 35	.70	.74	1.30
No. 36	.76	.80	1.50
No. 37	1.00	1.04	1.70
No. 38	1.30	1.34	2.00
No. 39	2.00	2.00	3.25
No. 40	2.60	2.60	5.75

Spring Wire, 2¢ ₩ lb advance.

Copper Belt and Hose Rivets and Burrs.

	Per lb.		Per lb.
No. 5	49¢	No. 11	56¢
No. 6	49¢	No. 12	58¢
No. 7	49¢	No. 13	60¢
No. 8	50¢	No. 14	65¢
No. 9	52¢	No. 15	70¢
No. 10	54¢		

Spelter.

Duty: Pig, Bars and Plates, $1.50 ₩ 100 lb.

Western Spelter	6½ @ 6¾¢
"Bertha"	8¼¢

Zinc.

Duty; Sheet, 2½¢ ₩ lb.

600 lb casks	7½¢
Per lb	7½¢

Lead.

Duty: Pig, $2 ₩ 100 lb. Old Lead, 2¢ ₩ lb. Pipe and Sheets, 2½¢ ₩ lb.

American	5 ¢ @ 5¼¢
Bar	5¼¢ @ 5½¢
Pipe, subject to trade discount	7½¢
Tin-Lined Pipe, subject to trade discount	15¢
Block Tin Pipes, subject to trade discount	40¢
Sheet, subject to trade discount	8¢

Solder.

½ @ ½ (Guaranteed)	16¢
No. 1	13¢
Extra Wiping	11¼¢ @ 13¢

The prices of the many other qualities of Solder in the market indicated by private brands vary according to composition.

Antimony.

Cookson	₩ lb 19¾¢ @ 20¢
Hallett's	" 18½¢

ALUMINUM.

Prices in Ingots.

$2.00 ₩ lb in lots of 1000 lb and over.
$2.25 ₩ lb in lots of 500 lb and over.
$2.50 ₩ lb in lots of 100 lb and over.

For prices on Rolled Sheets, Tubing, Casting and Wire, see *The Iron Age*, December 11, 1890, page 1170.

Old Metals.

(Prices Paid in New York.)

Heavy Copper	₩ lb 12 ¢
Light Copper	₩ lb 11 ¢
Heavy Brass	₩ lb 10 ¢
Light Brass	₩ lb 8 ¢
Lead	₩ lb 4 ¢
Tea Lead	₩ lb 3½¢
Zinc	₩ lb 3 ¢
No. 1 Pewter	₩ lb 16 ¢
No. 2 Pewter	₩ lb 8 ¢
Wrought Scrap Iron	₩ gross ton $19.00
Heavy Cast Scrap	₩ gross ton 12.00
Stove Plate Scrap	₩ gross ton 8.00
Burnt Iron	₩ gross ton 6.00